HITACHI
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SERVICE MANUAL

ATSC
NTSC

DW3-U
CHASSIS

PA **No. 0224**

P50H401 / DW3-U
P50H4011 / DW3-U
P50T551 / DW3-U

R/C: CLU-4371UG2	**p/n HL02075**	**P50H401**
R/C: CLU-4372UG2	**p/n HL02076**	**P50H4011**
R/C: CLU-4371A	**p/n HL02401**	**P50T551**

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CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of Electric shock do not perform any servicing other than that contained in the operating instructions Unless you are qualified to do so. Before servicing this chassis, it is important that the service Technician read the “IMPORTANT SAFETY INSTRUCTIONS” in this service manual.

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a ⚠ on the schematics and on the parts list in this Service Data and its supplements and bulletins. Before servicing the chassis, it is important that the service technician Read and follow the “Important Safety Instructions” in this Service Manual.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

Version 0224-9
Updated 02/09/2008

PLASMA DISPLAY PANEL

FEBRUARY 2007
HHEA-MANUFACTURING DIVISION

SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety-related notes located on or inside the cover case and on the chassis or plasma module.

WARNING: Since the chassis of this receiver is connected to one side of the AC power supply during operation, whenever the receiver is plugged in service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of receiver.

1. When service is required, an isolation transformer should be inserted between power line and the receiver before any service is performed on a "HOT" chassis receiver.
2. When replacing a chassis in the receiver, all the protective devices must be put back in place, such as barriers, non-metallic knobs, insulating cover-shields, and isolation resistors, capacitors, etc.
3. When service is required, observe the original lead dress.
4. Always use manufacturer's replacement components. Critical components as indicated on the circuit diagram should not be replaced by another manufacturer's. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of over heating.
5. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the receiver by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

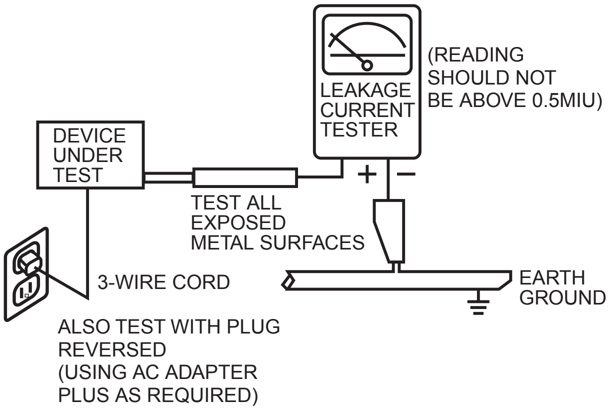
With the AC plug removed from the 120V AC 60Hz source, place a jumper across Line 1 and Line 2 of the three plug prongs, do not connect with the third prong, which is physical ground.

Using an insulation tester (DC500V), connect one of its leads to the AC plug jumper and touch with the other lead each exposed metal part (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis should have a resistor reading over 4MΩ. Any resistance value below this range indicates an abnormality which requires corrective action. An exposed metal part not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with the American National Standards Institute (ANSI) C101.0 Leakage Current for Appliances. In the case of the PDP monitor set the AC switch first in the ON position and then in the OFF position, measure from across Line 1 and Line 2 of the three plug prongs, do not connect with the third prong, which is physical ground, to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 MIU. Reverse the instrument power cord plug in the outlet and repeat test.

AC LEAKAGE TEST


LEAKAGE CURRENT TESTER
(READING SHOULD NOT BE ABOVE 0.5MIU)
DEVICE UNDER TEST
+
−
TEST ALL EXPOSED METAL SURFACES
3-WIRE CORD
EARTH GROUND
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUS AS REQUIRED)

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE RECEIVER TO THE CUSTOMER.

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PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified with a ⚠ mark in the schematics and parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI-recommended replacement component, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of HITACHI Service Manuals may be obtained at a nominal charge from HITACHI Sales Corporation.

1. Follow the general caution recommendations from "Safety precautions" section.

P50H401/P50T501/P50H4011 - Plasma Monitor Unit

1. Follow the general caution recommendations from "Safety precautions" section.
2. Since the Panel module and front filter are made of glass, sufficient care shall be taken when handling the broken module and filter in order to avoid injury.
3. If necessary to replace Panel module, this work must be started after the panel module and the AC/DC Power supply becomes sufficiently cool.
4. Special care must be taken with the display area to avoid damaging its surface.
5. The Panel Module shall not be touched with bare hands to protect its surface from stains.
6. It is recommended to use clean soft gloves during the replacing work of the Panel module in order to protect, not only the display area of the panel module but also the serviceman.
7. The Chip Tube of the panel module (located upper left of the back of the panel module) and flexible cables connecting Panel glasses to the drive circuitry Printed Wiring Boards (P.W.B.) are very weak, so sufficient care must be taken to prevent breaking or cutting any of these. If the Chip Tube breaks the panel module will never work, replacement for a new plasma panel module will be needed.
8. AV Digital Block, power supply and PDP driving circuit P.W.B.'s are assembled on the rear side of the PDP module, take special care with this fragile circuitry; particularly, Flexible Printed Circuits bonded to surrounding edges of the glass panel. They are not strong enough to withstand harsh outer mechanical forces. Avoid touching the flexible printed circuits by not only your hands, but also tools, chassis, or any other object. Extreme bending of the connectors must be avoided too. In case the flexible printed circuits are damaged, the corresponding addressed portions of the screen will not be lit and exchange of a glass panel will be required.

PDP Module Handling

When there is need to replace a broken PDP module which is the displaying device from the Plasma monitor unit, consider the following:

1. When carrying the PDP module, two persons should stand at both shorter-edge sides of the glass-panel and transport it with their palms. Avoid touching the Flexible Printed Circuits or the chip tube on the corner of the glass-panel. Handle only by the surface of the glass panel. In case of some PDP modules, electrode repair is done by connecting between regular terminal with Cu tape and Cu wire. Please do not hook and/or damage this repair line. If it is damaged, the module will not function unless the glass-panel is exchanged with a new glass-panel.
2. When carrying PDP module, watch surrounding objects, such as tables, and also do not carry it alone since it may be dangerous and it will be damaged due to excessive stress to the module (glass-panel).
3. Please do not stand the module with the edge of the glass-panel on the table since this might result in damage to the glass-panel and/or flexible printed circuits due to excessive stress to the module (glass-panel).

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health and Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with solder. Also, when soldering make sure you are in a well ventilated area in order to avoid inhalation of any smoke or fumes released.

SAFETY NOTICE
USE ISOLATION TRANSFORMER
WHEN SERVICING

POWER SOURCE

This plasma television is designed to operate on 120 Volts 60Hz, AC house current. Insert the power cord into a 120 Volts 60Hz outlet.

NEVER CONNECT THE PLASMA TELEVISION TO OTHER THAN THE SPECIFIED VOLTAGE OR TO DIRECT CURRENT AND TO 50HZ. TO PREVENT ELECTRIC SHOCK, DO NOT USE THE PLASMA TELEVISION'S (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE, OR THE OUTLETS UNLESS THE BLADES AND GROUND TERMINAL CAN BE FULLY UNSERTED TO PREVENT BLADE EXPOSURE.

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SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this service data and its supplements and addenda, read and follow the “Important Safety Instructions” on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Guidelines

1. Always unplug the instrument AC power cord from the AC power source before:
   a. Removing or reinstalling any component, circuit board, module, or any other instrument assembly.

   b. Disconnecting or reconnecting any instrument electrical plug or other electrical connection.

   c. Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

   CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this instrument or any of its assemblies.

3. Unless specified otherwise in these service data, clean electrical contacts by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength).
   CAUTION: This is a flammable mixture. Unless specified otherwise in these service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket of voltage interlocks with which instruments covered by this service data might be equipped.

5. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat-sinks are correctly installed.

6. Always connect the test instrument ground lead to the appropriate instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

7. Use with this instrument only the test fixtures specified in this service data.
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this instrument.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or desolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ES device.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

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General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range 500°F to 600°F.

2. Use an appropriate lead free solder (see page 8). Lead solder can be used, but there is a possibility of failure due to insufficient strength of the solder.

3. Keep the soldering iron tip clean and well-tinned.

4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.

5. Use the following desoldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

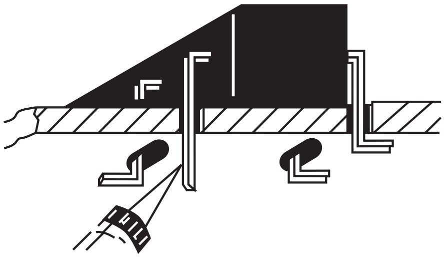
   b. Heat the component lead until the solder melts. Quickly draw away the melted solder with an anti-static, suction-type solder removal device or with solder braid.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil.

6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

   b. First, hold the soldering iron tip and solder strand against the component lead until the solder melts.

   c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil or components.

   d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



Use Soldering Iron to Pry Leads

IC Removal/Replacement

Some Hitachi unitized chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.

2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.

2. Carefully bend each IC lead against the circuit foil pad and solder it.

3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to areas.)

“Small-signal” Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.

2. Bend into a “U” shape the end of each of the three leads remaining on the circuit board.

3. Bend into a “U” shape the replacement transistor leads.

4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the “U” with long nose pliers to insure metal to metal contact, then solder each connection.

Power Output Transistor Devices Removal/Replacements

1. Heat and remove all solder from around the transistor leads.

2. Remove the heatsink mounting screw (if so equipped).

3. Carefully remove the transistor from the circuit board.

4. Insert new transistor in circuit board.

5. Solder each transistor lead, and clip off excess lead.

6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.

2. Bend the two remaining leads perpendicularly to the circuit board.

3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.

4. Securely crimp each connection and solder it.

5. Inspect (on the circuit board copper side) the solder joints of the two “original leads”. If they are not shiny, reheat them and, if necessary, apply additional solder.

Fuses and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of circuit board hollow stake.

2. Securely crimp leads of replacement component around stake 1/8 inch from top.

3. Solder the connections.

   CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board, to prevent excessive component temperatures.

Circuit Board Foil Repair

Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board, causing the foil to separate from, or “lift-off,” the board. The following guidelines and procedures should be followed whenever this condition is encountered.

In Critical Copper Pattern Areas

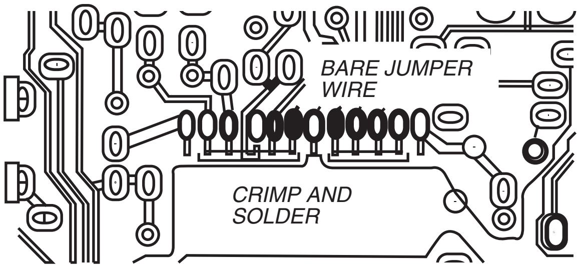
High component/copper pattern density and/or special voltage/current characteristics make the spacing and integrity of copper pattern in some circuit board areas more critical than in others. The circuit foil in these areas is designated as Critical Copper Pattern. Because Critical Copper Pattern requires special soldering techniques to ensure the maintenance of reliability and safety standards, contact your Hitachi personnel.

At IC Connections

To repair defective copper pattern at IC connections, use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections.)

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary.)

2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.



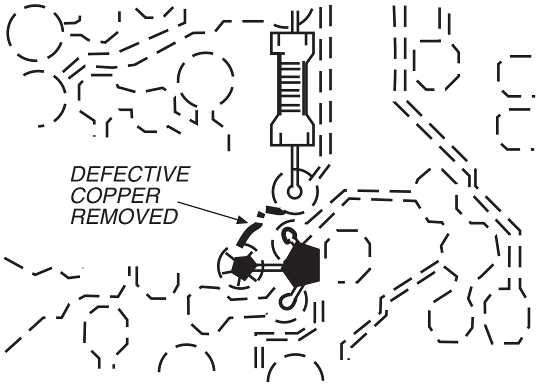
Install Jumper Wire and Solder

3. Bend a small “U” in one end of a small-gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.

4. Route the jumper wire along the path of the cut-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area, and clip off any excess jumper wire.

At Other Connections

Use the following technique to repair defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.



Insulated Jumper Wire

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure hazardous condition will not exist if the jumper wire opens.

2. Trace along the copper pattern from both wire sides of the pattern break and locate the nearest component directly connected to the affected copper pattern.

3. Connect insulated 20-gauge jumper wire from the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

   CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

NOTE: ***These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.***

Leadless Chip Components (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chip capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitors may also be limited for the same reason. It is recommended that identical chip components be used. .

Chip resistors have a three digit numerical resistance code -1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6KΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

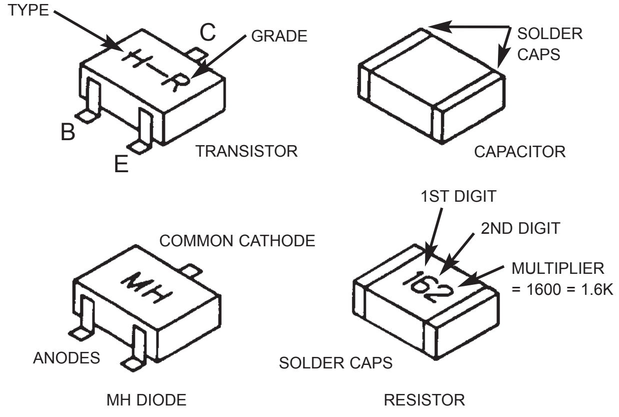
Component Removal

1. Use solder wick to remove solder from component end caps or terminals.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal .

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds

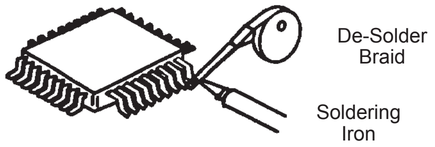
Chip Components


TYPE
C
GRADE
H—R
B
E
TRANSISTOR
SOLDER CAPS
CAPACITOR
COMMON CATHODE
MH
ANODES
MH DIODE
1ST DIGIT
2ND DIGIT
MULTIPLIER = 1600 = 1.6K
162
SOLDER CAPS
RESISTOR

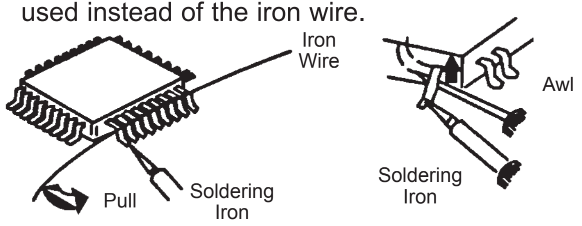
How to Replace Flat-IC
—Required Tools—

- Soldering iron
- De-solder braids
- iron wire or small awl
- Magnifier

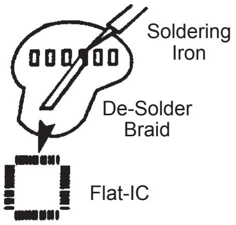
1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.


De-Solder Braid
Soldering Iron

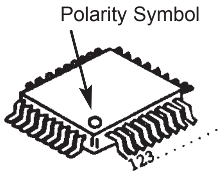
2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.


Iron Wire
Pull
Soldering Iron
Awl
Soldering Iron

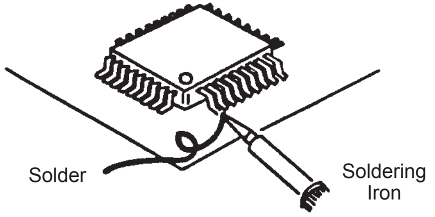
3. Remove the solder from all of the pads of the Fiat-IC by using a de-solder braid.


Soldering Iron
De-Solder Braid
Flat-IC

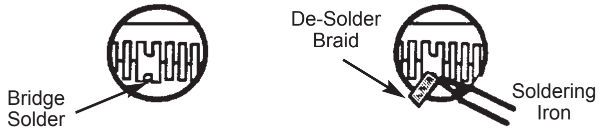
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol.


Polarity Symbol
123

5. Solder all pins to the soldering pads using a fine tipped soldering iron.


Solder
Soldering Iron

6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.


De-Solder Braid
Bridge Solder
Soldering Iron

Information for service about lead-free solder introduction

Hitachi introduced lead-free solder to conserve the "Earth Environment".
Please refer to the following before servicing.

(1) Characteristic of lead-free solder

Melting point of lead free solder is 40-50°C higher than solder containing lead.

(2) Solder for service

Following composition is recommended.

" Sn - 3.0Ag - 0.5Cu " , or " Sn - 0.7 Cu "

Lead solder can be used, but there is a possibility of failure due to insufficient strength of the solder.

Caution when using solder containing lead.

Please remove previous solder as much as possible from the soldering point.
When soldering, please perfectly melt the lead-free solder to mix well with the previous solder.

(3) Soldering iron for lead-free solder.

Melting point of lead-free solder is higher than solder containing lead.
Use of a soldering tool "with temperature control" and "with much thermal capacitance" is recommended.
(Recommended temperature control : 320°C - 450°C)

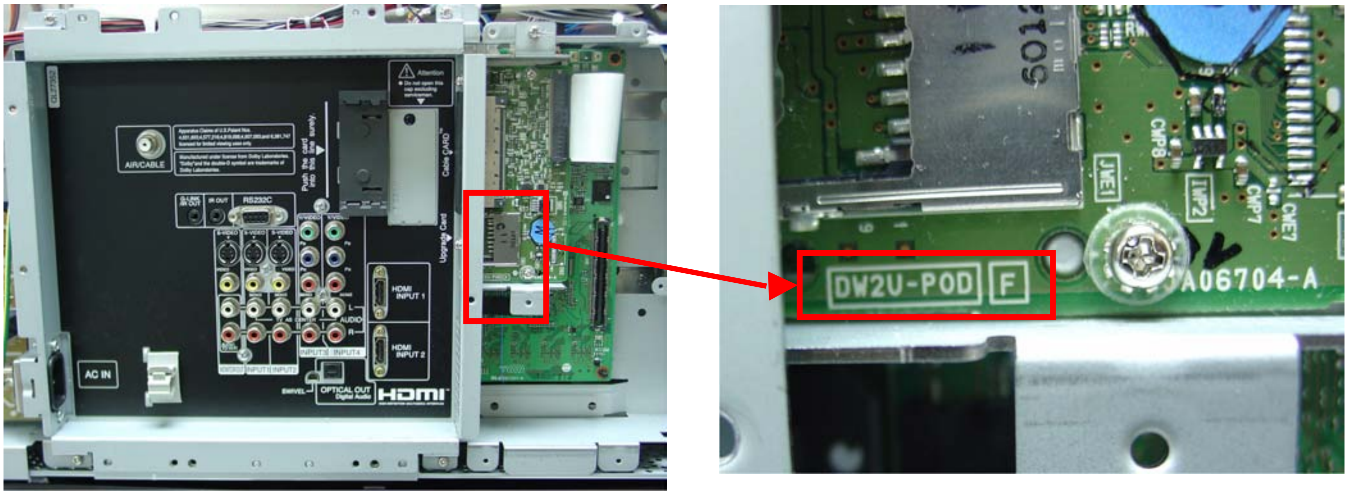
Recommended temperature

PWB with chip parts	320°C +/- 30°C
PWB without chip parts	380°C +/- 30°C
Chassis, metal, shield etc.	420°C +/- 30°C

(4) Identification of lead-free PWB

2004 models	>> lead-free solder is introduced
2007 models	>> lead-free solder apply

On lead-free PWB, "F" is added at the beginning of stamp on PWB. (e.g. DW2-POD F)



AGENCY REGULATORY INFORMATION

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

FCC Information

This device complies with part15 of the FCC Rules.Operation is subject to the following two conditions : (1) This decide may not cause harmful interference and (2) This decide must accept any interference received, including interference that may cause undesired operation.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hitachi America ,Ltd. Home Electronics Division may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Any cables that are supplied with the system must be replaced with identical cables in order to assure compliance with FCC rules. Order Hitachi spares as replacement cables.

Note

This Plasma Television receiver will display television closed captioning, (CC or 🗨), in accordance with paragraph 15.119 and 15.122 of the FCC rules.

INDUSTRY CANADA AGENCY REGULATORY INFORMATION

Cable Compatible Television Apparatus- Tèlèvision câblocompatible, Canada.

ACKNOWLEDGMENTS AND TRADEMARKS

This Plasma Television complies with VESA DDC2B specifications, Plug & Play is a system with computer, peripherals (including monitors) and operating system. It works when the monitor is connected to a DDC ready computer that is running an operating system software that is capable for the plug & play.

When a Plug and Play PC is powered on, it sends a command to the Monitor requesting identification. The Monitor sends back a string of data including its characteristics.

TRADEMARK ACKNOWLEDGMENT

DDC$^{\text{TM}}$ is a trademark of Video Electronics Standard Association.
IBM PC/AT and VGA are registered trademarkds of International Business Machines Corporation of the U.S.A.
Apple and Macintosh are registered trademarks of Apple Computer, Inc.
VESA is a trademark of a nonprofit organization, Video Electronics Standard Association.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Cable Compatible Television Apparatus- Tèlèvision câblocompatible, Canada.

Notes on Closed Caption:
This Plasma Television receiver will display television closed captioning, (CC or 🗨), in accordance with paragraph 15.119 of the FCC rules.

DOLBY® DIGITAL

**Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.*

TABLE OF CONTENTS

INTRODUCTION

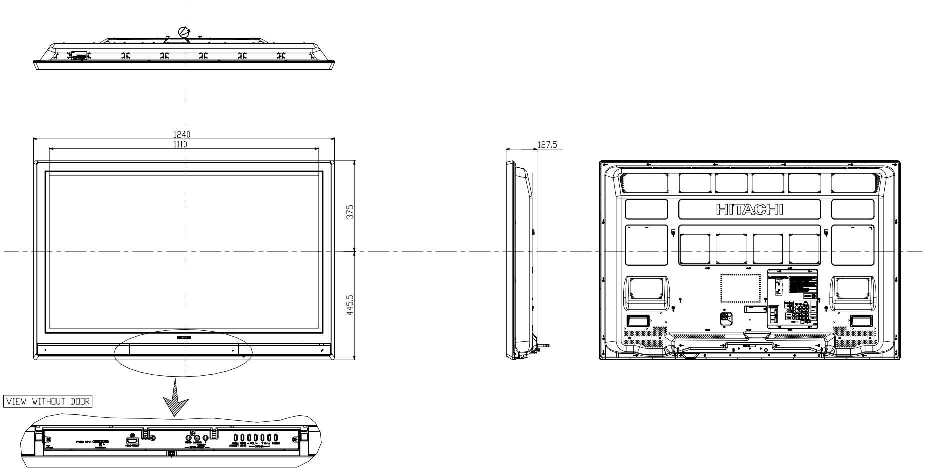
The Digital AV Block is inside of the Panel assembly controls most of the user functions of the complete TV set and conditions the signal to the plasma panel.

The 50" monitor contains the displaying device, which is the plasma display panel module, and the driving circuitry, which receives the signal from the Digital AV Block and after processing, delivers the image to the display module.

This HITACHI Service Manual is intended for the qualified service personnel and it contains the necessary information for troubleshooting the Plasma television set in case of malfunction.

DIMENSIONS:

P50H401/P50T501/P50H4011



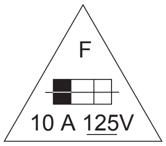
POWER RATINGS:

No.	Model Name	Indicated Value			PST(W)		Chassis
		Max Rating		Average Rating (W)	Without POD. less than 1W	With POD. less than 14W	
		(W)	(A)				
1	P50H401/T501 P50H4011	460W	3.9A	282W	0.6W	-------	DW3A

CIRCUIT PROTECTION

CAUTION: Below is an EXAMPLE only. See Replacement Parts List for details. The following symbol near the fuse indicates fast operation fuse (to be replaced). Fuse ratings appear within the symbol.

Example:



10 A/125 V

"RISK OF FIRE - REPLACE FUSE AS MARKED"

The rating of fuse F9A1 is 10 A - 125V.
Replace with the same type fuse for continued protection against fire.

SPECIFICATIONS

FEATURES

2007 50" Plasma models

Model				P50H401/P50T501/P50H4011	
Dimension	Size		1	1240mm x 880.85mm x 422mm	
	Weight		2	53 Kg	
A/C Input Voltage	Input AC Voltage		3	AC108V~132V (with 3 Plug AC Power Cord inlet type ,1.8m length)	
	Input AC Frequency		4	60Hz	
	Power Consumption		5	460W, SBY less than 1W	
Front End	Front End(NTSC & ATSC)		6	ENGD6305 NTSC/ATSC(8VSB),64QAM,256QAM)	
	Available Channel		7	2~13	VHP
			8	14 ~ 69	UHF
			9	A-5~A-1,A~W,W+1~W+94	CATV
Input Signal	Video Signal		10	NTSC	
	Component Signal		11	480i, 480p, 720p,1080i	
	HDMI Signal		12	480i, 480p, 720p, 1080i, 1080p (EIA-861B)	*1)
Picture	Y/C Separation		13	3D Y/C (ON fix)	
	Line Correction		14	No	
	I-P Conversion		15	Motion Adaptive & Multi Angle Interpolation	
	Picture Mode		16	Day(Dynamic), Day(Normal),Night	
Sound Enhancement			17	BassBoost (On,Off) & Surround (Normal, Wide, Off)	
Adjustment	Settings for Video Signal		18	Picture Mode, Contrast, Brightness, Color, Tint, Sharpness Color Temperature, Black Enhancement, Contrast Mode, Noise Reduction, MPEG-NR, Auto Movie Mode, Aspect, Black Side Panel.	
	Settings for Sound		19	Volume, Balance, Bass, Treble, Audio Source, Internal Speakers, Auto Noise Cancel, Perfect Volume, Mute, Soft Mute, Loudness, DRC.	
General Function	PinP Mode	Split	20	With(ANT/CABLE DIGITAL CHANNEL & Video 480i ,720p, 1080i)	Only P50T501 model
		Freeze	21	With(3Pix:only ANT/CABLE DIGITAL CHANNEL, Video, 480i).	
	Wide Mode		22	7 Mode	
	Aspect	Video Selection	23	4:3 Standard/16:9 Standard1 /16:9 Standard 2 4:3 Expanded/Zoom1/Zoom 2/16:9 Zoom	
	Film Theater		24	With(Auto Movie Mode:On/Off)	
	Color Temperature		25	3 Mode (High/Medium/Standard)	
	Input Signal Selection		26	Input1/2/3/Front, Cable/ Air,HDMI1/2/Front,Photo Input	Photo Input only P50T501

*1) When HDMI input a 1080p signal, the length of the cable should be less than 5 meters.

SPECIFICATIONS

FEATURES (continued)

Model			P50H401/P50T501/P50H4011	
General Function	Gamma Correction	27	Only for Service Menu	
	Picture Enhancer	28	-	
	Input Signal Identification	29	yes	
	Audio Special Mode	30	No	
	Power Save Mode	31	With (On/Off) (Video In)	LED Normal: Blue Power Save: Orange Stand by: Red
		32		
	Burning Protection	33	With (Raster Shift:3 option.All White Pattern)	
	OSD Language (VIDEO)	34	ENGLISH, FRANCAIS, ESPAÑOL	
	Swivel	35	H401: Fix, T501 : Manual Swivel	
R/C Handset		36	CLU-4371UG2 (P50H401)/CLU-4372UG2 (P50H4011)/CLU-4371A (P50T501)	HOSHIDEN/PANASONIC
In/Out Terminal	Composite Video Input (Input 1~3, Front)	37	4 Input: RCA pin* 5 (1 Input Front Panel)	
	S-In(S2 Terminal) (Video/S are common selector, priority is S-In) .	38	1 Input: Mini Din-4P x 2	
	Component Signal Input (Input 2, Input 3)	39	3 Input:RCA pin x 9(Y of input 1/2/5 is common input for Composit e-In)	
	Digital Input(HDM I-HDCP)	40	3 Input:HDMI(19P)X3	
	Audio In (L/R) (Lch:mono)	41	4 Input:RCApinx8	
	Auto Link	42	1 Input (Input 3 LINK)	Auto Link Function
	Video Control Terminal (BS)	43	No	
	U/V Ant Input	44	CABLE / AIR	
	BS-I/F Input	45	No	
	Video Monitor Out Terminal	46	1 Output: RCA pin x 1	
	Audio Output Terminal	47	1 Output L/R:RCA pinx 2	
	Audio Monitor Out Terminal	48	1 Output L/R:RCA pinx 2 (common input for No.60)	
	RS-232C Terminal	49	1 (Female type)	
	Photo Input	50	1 (On Front panel)	P50T501 model only
	Audio Optical Output	51	1 (Square type)	
Front Key	Main Power Switch	52	Yes , below panel	
	Power On/off Switch	53	Yes, on Front panel	
	IR Receiving Unit	54	Yes, on Front panel	
	Power Indicator LED	55	Yes, on Front panel	
	Menu Control Key	56	Yes, on Front panel (Channel U/D, Vol U/D, A/V Input Select , Menu Select)	
Option	POP TV Stand	57	With	
	Wall Mount Unit	58	With	

FEATURES & DIFFERENCES BETWEEN 50" MODELS

Model Name	Class	Chassis	Series Name	Cabinet Design	Aspect	ATSC	ATSC/NTSC 1Tuner	QAM Basic Digital Cable	POD	MPEG Decoder	EPG Gemstar	M/C
P50H401	H401	DW3A	UltraVision	Bottom Speaker Silver	16x9	X	X	X	-	X	-	SD
P50T501	T501	DW3A	Cineform	WW Bottom Speaker Black/Silver	16x9	X	X	X	-	X	-	SD
P50H4011	H4011	DW3A	UltraVision	Slim Spkr Black/Metallic Black Bezel	16x9	X	X	X	-	X	-	SD

Model Name	Class	DTV NTSC FORMAT	Seine	3/2 Pulldown	Fill Mode	Memory by inputs	Shield	Comb Filter	Resolution	OSD	Color Temp
P50H401	H401	1080i	Seine2	Auto/off	7modes	X	36% mesh	3DYC	1280x1080	07 OSD B	3Mode(High, Med,Std)
P50T501	T501	1080i	Seine2	Auto/off	7modes	X	31% mesh	3DYC	1280x1080	07 OSD C	3Mode(High, Med,Std)
P50H4011	H4011	1080i	Seine2	Auto/off	7modes	X	36% mesh	3DYC	1280x1080	07 OSD B	3Mode(High, Med,Std)

Model Name	Class	PIP	AV NET	Remote			IR Pass Thru	Discrete Code	Dolby	Sound function		
				Type	Source Color	Simple UEI				Perfect Volume	Surround	BassBoost
P50H401	H401	----	-	TVU	Hoshiden/Silver	-	-	X	AC3 Downmix	×	×	×
P50T501	T501	Digital Tuner/Ext SPLIT	-	TVU	PANA/Black	-	-	X	AC3 Downmix	×	×	×
P50H4011	H4011	----	-	TVU	Hoshiden/Black	-	-	X	AC3 Downmix	×	×	×

Model Name	Class	TV Center	Output Watt	Speaker	Rear Jacks												
					Digital I/F		RS232C	IR-Out	YPbPr	S IN	AV IN	S OUT	V OUT	AUDIO OUT	Y As Composite	6CH OUT	RF
					IEEE1394	HDMI											
P50H401	H401	L/mono	20	2FR	-	2	1	-	2(1H,2H,2.14H)	1	3	1	1	1	X	OPT	1
P50T501	T501	L/mono	20	2FR	-	2	1	-	2(1H,2H,2.14H)	1	3	1	1	1	X	OPT	1
P50H4011	H4011	L/mono	20	2FR	-	2	1	-	2(1H,2H,2.14H)	1	3	1	1	1	X	OPT	1

Model Name	Class	Front Jacks			
		Composite	L/R	HDMI	Y,Pb,Pr
P50H401	H401	1	1	1	-
P50T501	T501	1	1	1	-
P50H4011	H4011	1	1	1	-

Model Name	Class	Power LED	Downloadable V Chip	Energy Star	PLC	Option Wall mount	Swivel	Table Top Stand	Hotel Mode	Adjust Color Decoder	Color Manage	Contrast Mode
P50H401	H401	Blue	X	X	X	X	Fixed	× BLK(9000)	×	-	-	X
P50T501	T501	Blue	X	X	X	X	Manual	× SIL(9000)	×	-	-	X
P50H4011	H4011	Blue	X	X	X	X	Fixed	× BLK(9000)	×	-	-	X

General Specifications

Model Specifications

Model Name Item		P50H401/P50T501/P50H4011
Destination		U.S.A. / CANADA
Exterior	Cabinet Dimensions (Main Body) (Speaker & stand inclusive)	1240mm x 880.85mm x 422mm
	Frame Color Screen	Metallic Black (T501/H4011) Brightness Silver (H401)
	Stand	Inclusive
	Weight (Main Body) (Speaker & stand inclusive) (Main Body: Packed)	46.8 kg (53 kg) 60 kg typ. 64.0 kg
	Screen Size	921x523.8mm
Display Panel	Resolution	1280x1080 pixels
	Dot Pitch (H)	0.864mm
	Dot Pitch (V)	0.580mm
Front Filter	Surface Finishing	0.4ohm Mesh
Brightness	Peak Brightness (1% window)	326 (280) cd/m^2 or more (When VIDEO, Day Dynamic mode, Color temperature 'HIGH',Input Signal Amplitude 100 % is set)
	All White Pattern	56 (48) cd/m^2 or more
Contrast	Contrast ratio	800 : 1 (typ)
Audio Output	Audio Output	10W+ 10W(5ohm>,10%Distortion)
Panel Operation	Main Power Switch	PUSH (LOCK) 1 switch
	Power Switch	PUSH (NON-LOCK) 1 switch
Input Terminal	Video/Audio Input	RCA, HDMI, S
Output Terminal	Audio Line Output	RCA
Power Supply Source	Connector	3 Polarity Receptacle
	Input Voltage	Single Phase AC108-132V, 60 Hz

Environment Specifications

NO	Item	Specification
1	Operating Temp.	+5℃~+35℃
2	Stock Temp.	-15℃~+60℃
3	Operating Humidity	20%~80%RH
4	Stock Humidity	20%~90%RH
5	Operating Atmosphere Pressure	700~1114h Pa (1888m~-757m)
6	Stock Atmosphere Pressure	300~1114h P a (4727m~-757m)
7	Warranty Gravity Vertical	0.85 G
8	Warranty Drop High	30cm
9	Tilt Angle	12° Over

9. Display Specification

9.1 Picture Format for Each Input Source
Aspect, Vertical Position, Black Side Panel, PIP Mode

9.1.1 Aspect

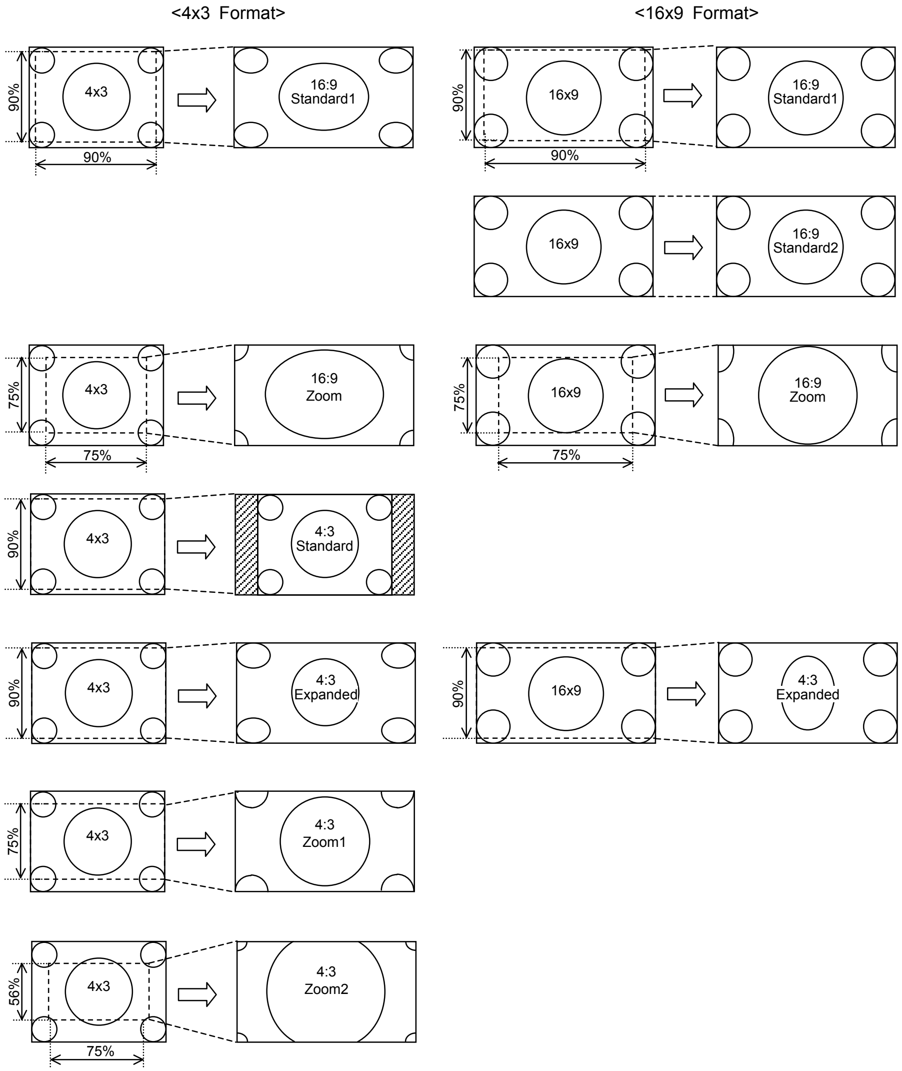
Yes : Selectable – : Un-selectable

Input Signal			Auto Aspect	Aspect Video ID	Aspect						
					16:9 Standard 1	16:9 Standard 2	16:9 Zoom	4:3 Standard	4:3 Expanded	4:3 Zoom 1	4:3 Zoom 2
ANT Analog	Video	NTSC	–	4x3	Yes	–	Yes	Yes	Yes	Yes	Yes
ANT Digital	YC_BC_R	480p 480i	–	16x9	Yes	–	Yes	–	Yes	–	–
			–	4x3	–	–	–	Yes	Yes	Yes	Yes
	YP_BP_R	1080i/720p	–	16x9	Yes	Yes	Yes	–	Yes	–	–
Input 1	Video S-Video	NTSC	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No ID	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–	Yes	–	Yes	Yes	Yes	Yes	Yes
Input 2	YP_BP_R	1080i/720p	–	16x9	Yes	Yes	Yes	–	Yes	–	–
		480p 480i	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No ID	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							
		No Signal	–	–							
	Video	NTSC	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No ID	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–	Yes	–	Yes	Yes	Yes	Yes	Yes
Input 3	YP_BP_R	1080i/720p	–	16x9	Yes	Yes	Yes	–	Yes	–	–
		480p 480i	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No ID	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							
		No Signal	–	–							
	Video	NTSC	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No ID	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							
Input Front	Video	NTSC	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No ID	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							

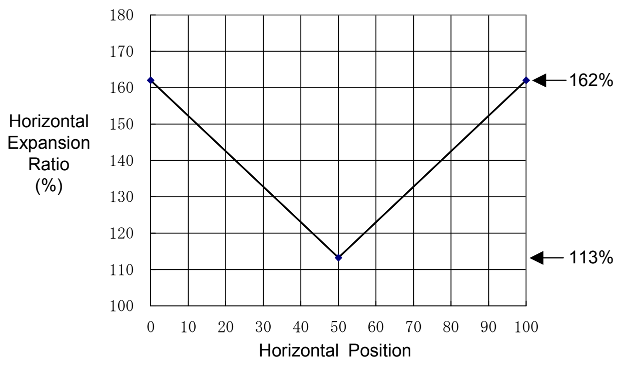
（Continuation）

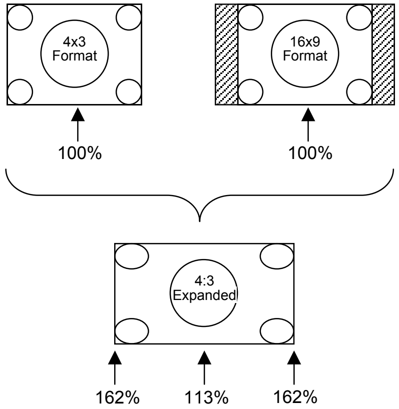
Input Signal			Auto Aspect	Aspect Video ID	Aspect						
					16:9 Standard 1	16:9 Standard 2	16:9 Zoom	4:3 Standard	4:3 Expanded	4:3 Zoom 1	4:3 Zoom 2
HDMI1 (Input1 -DVI)	HDMI (DVI)	1080p/ 1080i/720p	–	16x9	Yes	Yes	Yes	–	Yes	–	–
		480p 480i	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No Info	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							
HDMI2 (Input2 -DVI)	HDMI (DVI)	1080p/ 1080i/720p	–	16x9	Yes	Yes	Yes	–	Yes	–	–
		480p 480i	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No Info	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							
HDMI Front (InputFront -DVI)	HDMI (DVI)	1080p/ 1080i/720p	–	16x9	Yes	Yes	Yes	–	Yes	–	–
		480p 480i	Auto ON	16x9	Yes Initial	–	Yes	–	–	–	–
				Letter	–	–	–	Yes	Yes	Yes Initial	Yes
				4x3	–	–	–	Yes	Yes Initial	Yes	Yes
				No Info	Yes	–	Yes	Yes	Yes	Yes	Yes
			Auto OFF	–							
Horizontal Expansion				16x9	105%	100%	133%	–	133%	–	–
				4x3	105%	100%	133%	75%	100%	100%	133%
Vertical Expansion					105%	100%	133%	110%	110%	133%	176%

[Expansion]


<4x3 Format>
<16x9 Format>
90%
4x3
90%
16:9
Standard1
90%
16x9
90%
16:9
Standard1
16x9
16:9
Standard2
75%
4x3
75%
16:9
Zoom
75%
16x9
75%
16:9
Zoom
90%
4x3
4:3
Standard
90%
4x3
4:3
Expanded
90%
16x9
4:3
Expanded
75%
4x3
4:3
Zoom1
56%
4x3
75%
4:3
Zoom2

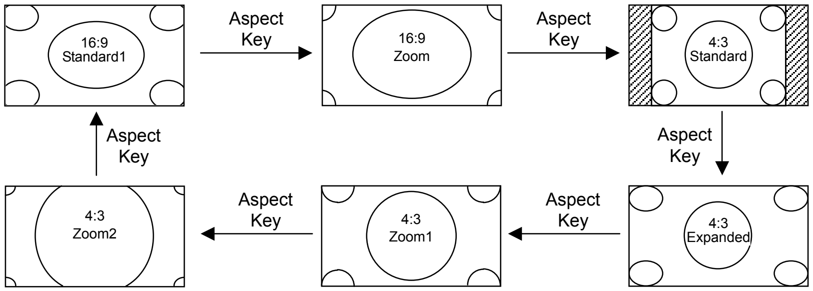
4:3 Expanded Mode




4x3
Format
16x9
Format
100%
100%
4:3
Expanded
162%
113%
162%

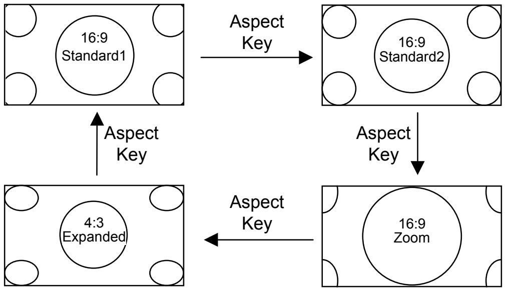
9.1.2 Aspect Key Operation

(1) ANT Analog Channel


16:9 Standard1
Aspect Key
16:9 Zoom
Aspect Key
4:3 Standard
Aspect Key
Aspect Key
4:3 Expanded
Aspect Key
4:3 Zoom1
Aspect Key
4:3 Zoom2
Aspect Key

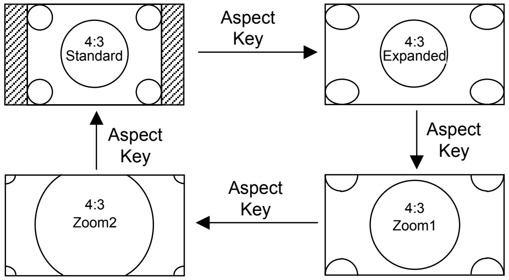
(2) ANT Digital Channel

(a) Aspect: 16x9

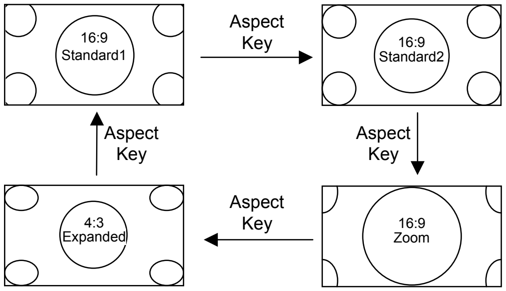

16:9 Standard1
Aspect Key
16:9 Standard2
Aspect Key
16:9 Zoom
Aspect Key
4:3 Expanded
Aspect Key

(This mode is for 1080p/1080i/720p only.)

(b) Aspect: 4x3

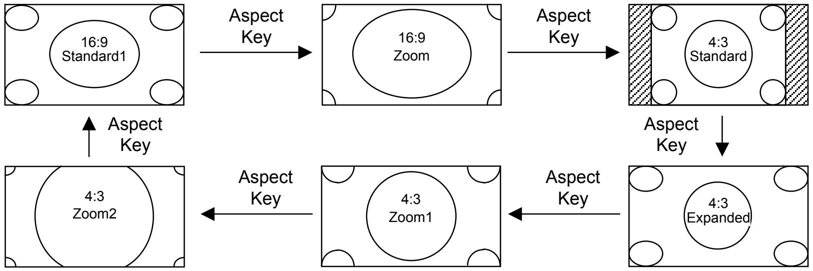

4:3 Standard
Aspect Key
4:3 Expanded
Aspect Key
4:3 Zoom1
Aspect Key
4:3 Zoom2
Aspect Key

(3) HDMI/YPBPR: 1080p/1080i/720p


16:9 Standard1
Aspect Key
16:9 Standard2
Aspect Key
16:9 Zoom
Aspect Key
4:3 Expanded
Aspect Key

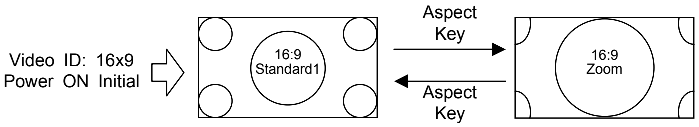
(4) HDMI/YPBPR: 480p/480i, Video/S-Video

(4-1) Auto Aspect OFF

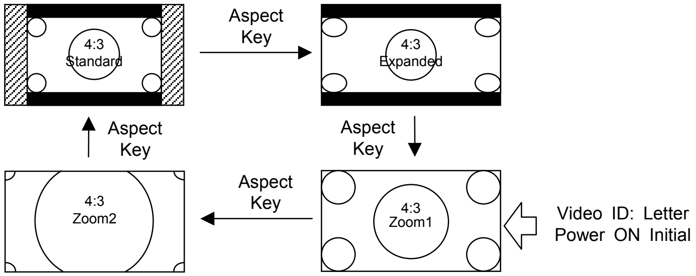

16:9 Standard1
Aspect Key
16:9 Zoom
Aspect Key
4:3 Standard
Aspect Key
4:3 Expanded
Aspect Key
4:3 Zoom1
Aspect Key
4:3 Zoom2
Aspect Key

(4-2) Auto Aspect ON

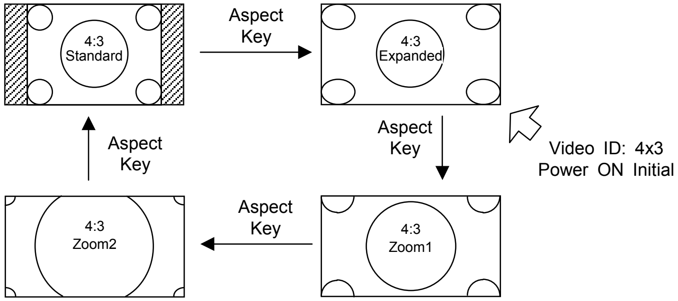
(a) Video ID/HDMI Info: 16x9


Video ID: 16x9
Power ON Initial
16:9 Standard1
Aspect Key
Aspect Key
16:9 Zoom

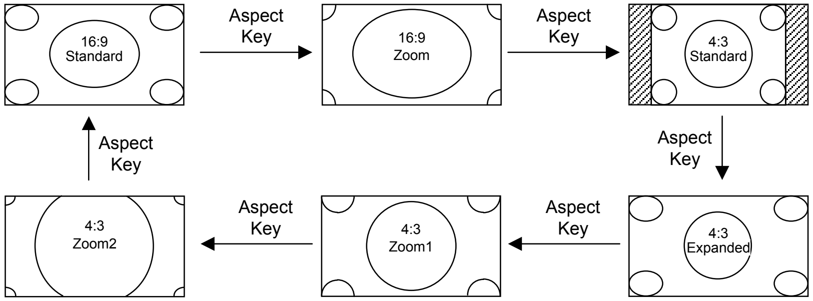
(b) Video ID/HDMI Info: Letter


4:3
Standard
Aspect
Key
4:3
Expanded
Aspect
Key
Aspect
Key
4:3
Zoom2
Aspect
Key
4:3
Zoom1
Video ID: Letter
Power ON Initial

(c) Video ID/HDMI Info: 4x3


4:3
Standard
Aspect
Key
4:3
Expanded
Aspect
Key
Aspect
Key
Video ID: 4x3
Power ON Initial
4:3
Zoom2
Aspect
Key
4:3
Zoom1

(d) No Video ID, No HDMI Info

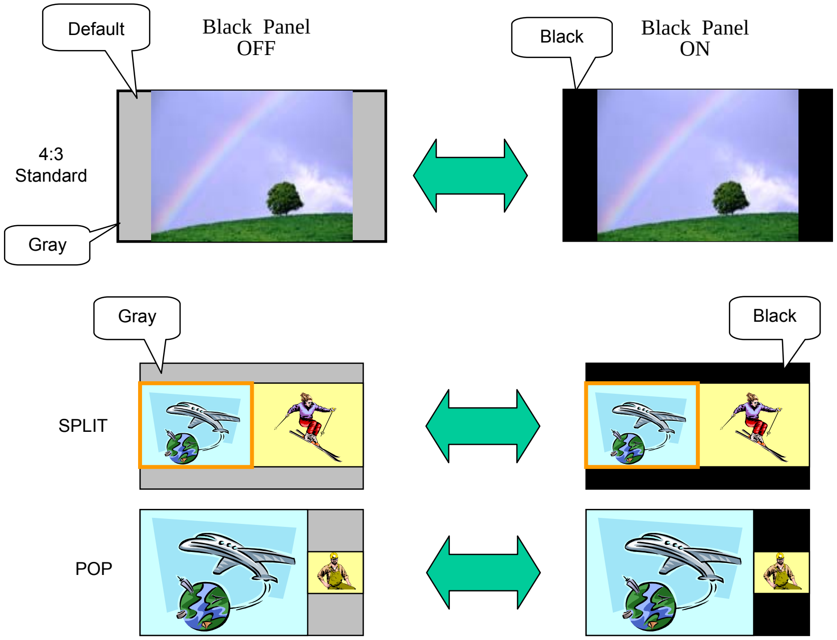

16:9
Standard
Aspect
Key
16:9
Zoom
Aspect
Key
4:3
Standard
Aspect
Key
Aspect
Key
4:3
Zoom2
Aspect
Key
4:3
Zoom1
Aspect
Key
4:3
Expanded

9.1.3 Vertical Position Operation

Input				Vertical Position					
				16:9 Standard1/2	16:9 Zoom	4:3 Standard	4:3 Expanded	4:3 Zoom 1	4:3 Zoom 2
ANT Analog	Video	NTSC	4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
ANT Digital	YPBPR	1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p	4x3	—	—	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
		480i	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
			4x3	—	—	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
Input 1	Video S-Video	NTSC	—	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
Input 2 - 3	YPBPR	1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
	Video	NTSC	—	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
Input Front	Video	NTSC	—	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
HDMI1	HDMI	1080p 1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
HDMI2	HDMI	1080p 1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
HDMI Front	HDMI	1080p 1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
PIP Mode	SPLIT/POP/ PIP/STROBE			±0 step Gray out					

9.1.4 Black Side Panel Operation

Model	Input	Aspect			POP/SPLIT/ FREEZE		PIP/STOROBE
		16:9 Standard1 16:9 Standard2 16:9 Standard 16:9 Zoom 4:3 Expanded 4:3 Zoom1 4:3 Zoom2 Full	4:3 Standard Normal Real		Black Side Panel "Off"	Black Side Panel "On"	-
			Black Side Panel "Off"	Black Side Panel "On"			
ALL	480p 1080i/720p	-	Gray	Black	Gray	Black	Gray
	ANT_Analog S-Video/Video 480i	-	Gray	Black	Gray	Black	Gray



9.1.5 PIP Mode

<Available Function on Each Model>

Model		PIP/POP	SPLIT	Freeze
PDP	T Series	-	X	X
	H Series	-	-	-

X: Available, -: Not available

<The Restriction of Main/Sub Source>

Main	Sub	Available or Not	
Digital (Air)	Digital (Air)	-	
Digital (Cable)	Digital (Cable)	-	
Analog (Air)	Analog (Air)	-	
Analog (Cable)	Analog (Cable)	-	
Digital (Air)	Analog (Cable)	-	
Digital (Cable)	Analog (Cable)	-	
Digital (Air)	Analog (Air)	-	
Digital (Cable)	Analog (Air)	-	
Analog (Air)	Analog (Cable)	-	
Analog (Cable)	Analog (Air)	-	
Analog (Air)	Digital (Air)	-	
Analog (Cable)	Digital (Cable)	-	
Analog (Air)	Digital (Cable)	-	
Analog (Cable)	Digital (Air)	-	
Input or HDMI	Input or HDMI	-	
Input or HDMI	Digital (Air)	X	
Input or HDMI	Digital (Cable)	X	
Input or HDMI	Analog (Air)	-	
Input or HDMI	Analog (Cable)	-	
Digital (Air)	Input or HDMI	X	
Digital (Cable)	Input or HDMI	X	
Analog (Air)	Input or HDMI	-	
Analog (Cable)	Input or HDMI	-	

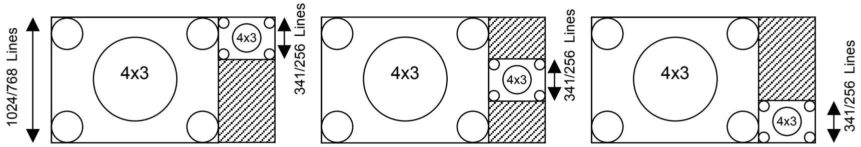
X: Available, -: Not available

PIP Mode	Sub Main			Digital						Component/Composite/S-IN/HDMI					
				1080i	720p	480p	480p	480i	480i	1080i/p	720p	480p	480p	480i	480i
				16x9	16x9	16x9	4x3	16x9	4x3	16x9	16x9	16x9	4x3	16x9	4x3
POP	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		720p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480p	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480i	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
	Component Composite S-IN HDMI	1080i/p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		720p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480p	16x9	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	—	—	—	—	—	—
		480p	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480i	16x9	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	—	—	—	—	—	—
		480i	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
PIP 16x9	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		720p	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		480p	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
	Component Composite S-IN HDMI	1080i/p	16x9	Yes	Yes	Yes	—	Yes	—	—	—	—	—	—	—
		720p	16x9	Yes	Yes	Yes	—	Yes	—	—	—	—	—	—	—
		480p	16x9	Yes*2	Yes*2	Yes*2	—	Yes*2	—	—	—	—	—	—	—
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	Yes*2	Yes*2	Yes*2	—	Yes*2	—	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
PIP 4x3	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		720p	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		480p	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
	Component Composite S-IN HDMI	1080i/p	16x9	—	—	—	Yes	—	Yes	—	—	—	—	—	—
		720p	16x9	—	—	—	Yes	—	Yes	—	—	—	—	—	—
		480p	16x9	—	—	—	Yes*2	—	Yes*2	—	—	—	—	—	—
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	Yes*2	—	Yes*2	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
SPLIT	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		720p	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480p	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480p	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480i	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480i	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
	Component Composite S-IN HDMI	1080i/p	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		720p	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480p	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480p	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480i	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480i	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
STROBE (4pix)	Digital (Air or Cable)	1080i	16x9	Yes	—	—	—	—	—	—	—	—	—	—	—
		720p	16x9	—	Yes	—	—	—	—	—	—	—	—	—	—
		480p	16x9	—	—	Yes	—	—	—	—	—	—	—	—	—
		480p	4x3	—	—	—	Yes	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	—	Yes	—	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	Yes	—	—	—	—	—	—
	Component Composite S-IN HDMI	1080i/p	16x9	—	—	—	—	—	—	Yes	—	—	—	—	—
		720p	16x9	—	—	—	—	—	—	—	Yes	—	—	—	—
		480p	16x9	—	—	—	—	—	—	—	—	Yes	—	—	—
		480p	4x3	—	—	—	—	—	—	—	—	—	Yes	—	—
		480i	16x9	—	—	—	—	—	—	—	—	—	—	Yes	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	Yes

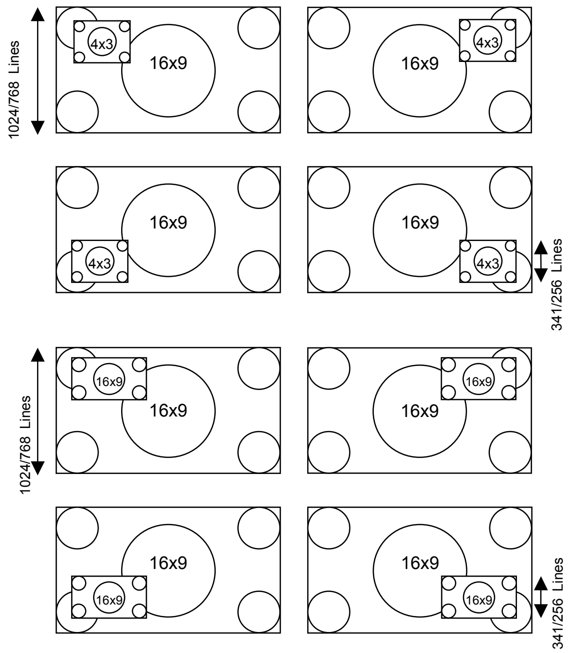
Yes*1: Auto Aspect OFF

Yes*2: Auto Aspect ON

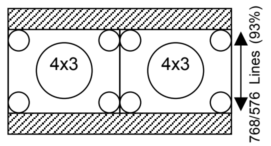
POP Mode:


1024/768 Lines
4x3
4x3
341/256 Lines
4x3
4x3
341/256 Lines
4x3
4x3
341/256 Lines

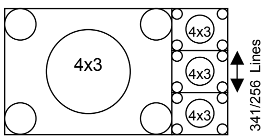
PIP Mode:


1024/768 Lines
4x3
16x9
4x3
16x9
16x9
4x3
16x9
4x3
341/256 Lines
1024/768 Lines
16x9
16x9
16x9
16x9
16x9
16x9
16x9
16x9
341/256 Lines

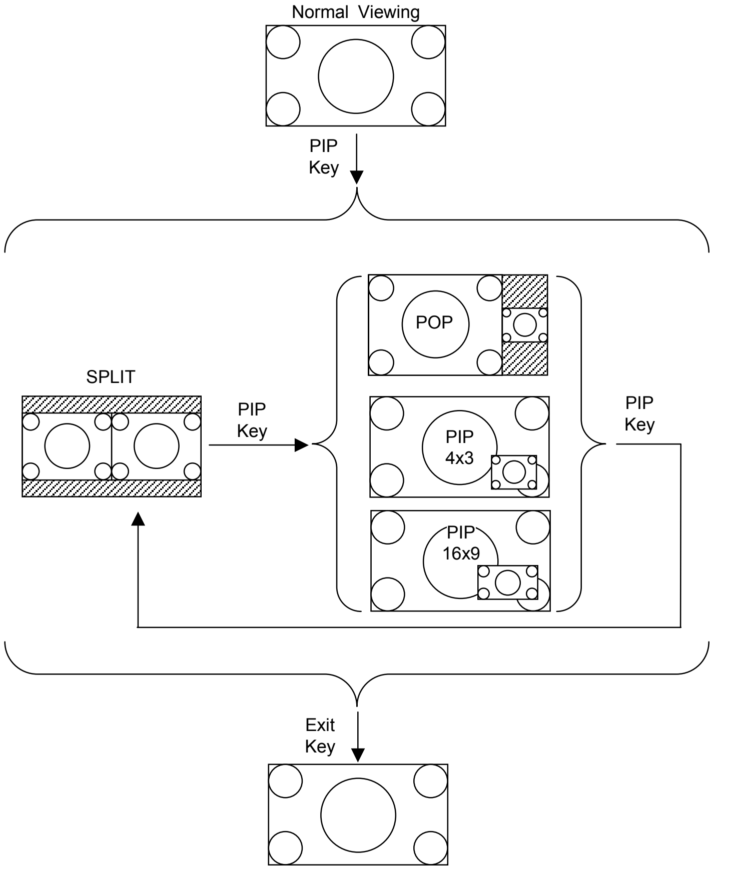
SPLIT Mode:


4x3
4x3
768/576 Lines (93%)

STROBE Mode:


4x3
4x3
4x3
4x3
341/256 Lines

(1) PIP Key Operation


Normal Viewing
PIP Key
SPLIT
PIP Key
POP
PIP 4x3
PIP 16x9
PIP Key
Exit Key

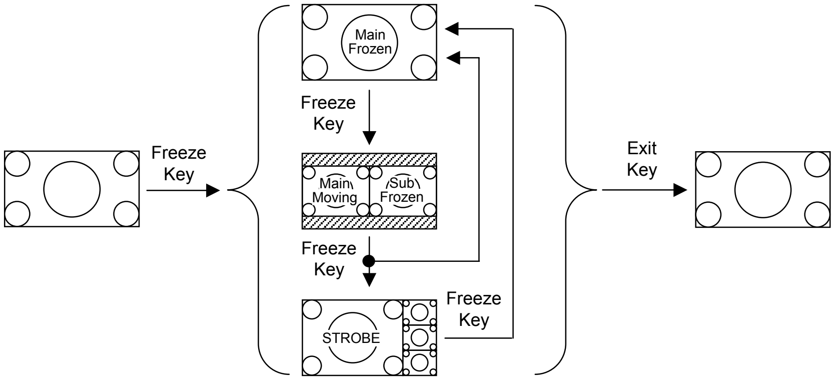
(Note)

If PIP Key is pushed from a Normal screen, PIP of Last Mode will be displayed.
A shipment setup of PIP Mode is SPLIT Mode.
POP/PIP Mode cannot display 720p/480p signals. Therefore, it displays by SPLIT Mode.

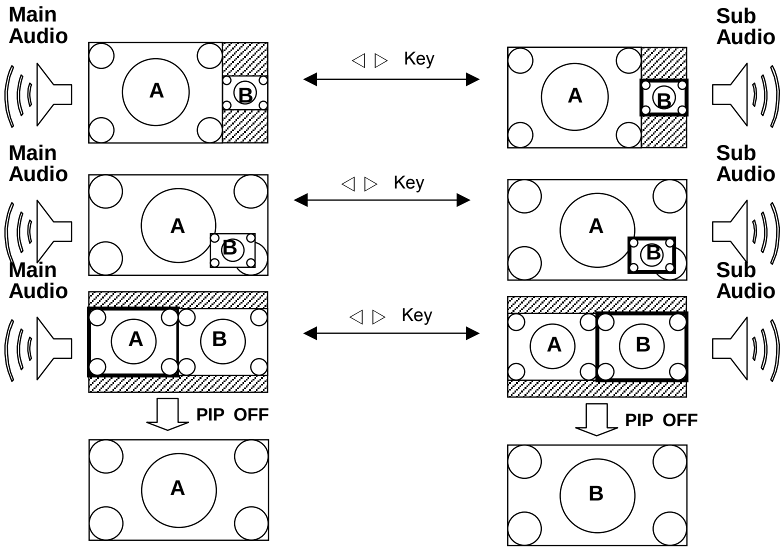
- ・When Last mode is POP/PIP Mode and a Main signal is 1080i, PIP Mode is set to PIP.
- ・When Last mode is POP/PIP Mode and a Main signal is 480i/NTSC, PIP Mode is set to PIP.
- ・SURF Mode is not displayed at a V-Chip setup. SPLIT Mode is displayed at this time.

When EXIT Key is pushed, PIP turns off.
When PIP is turns off, PIP Mode of a display turns into Last Mode.

(2) Freeze Operation


Freeze Key
Main Frozen
Freeze Key
Main Moving
Sub Frozen
Freeze Key
STROBE
Freeze Key
Exit Key

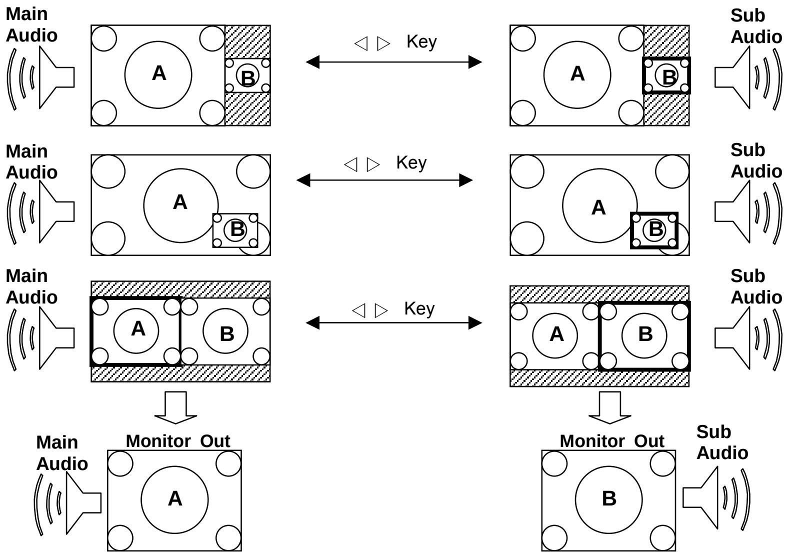
(3) SWAP Operation


Main Audio
A
B
◁ ▷ Key
Sub Audio
A
B
Main Audio
A
B
◁ ▷ Key
Sub Audio
A
B
Main Audio
A
B
◁ ▷ Key
Sub Audio
A
B
PIP OFF
A
PIP OFF
B

(Note)

When right and left Key are pushed, the sound of Main and Sub interchanges.
A Channel/Input change can do the screen out of which the sound has come.
When PIP OFF [EXIT Key], the screen where sound is sounding turns into a normal screen.

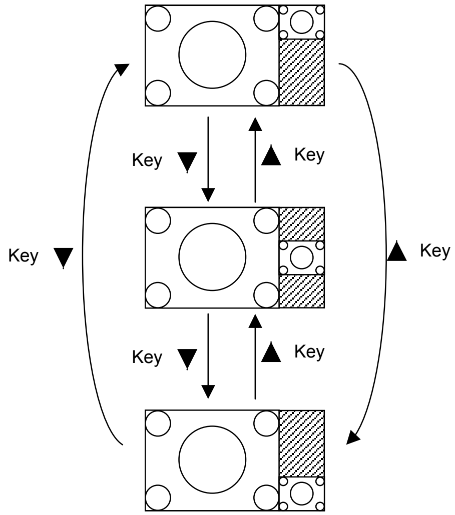
(4) Monitor Out

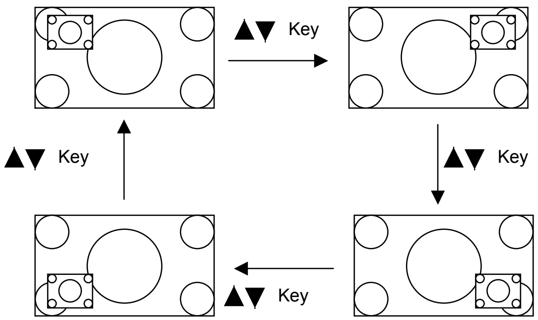

Main Audio
A
B
◁ ▷ Key
Sub Audio
Main Audio
A
B
◁ ▷ Key
Sub Audio
Main Audio
A
B
◁ ▷ Key
Sub Audio
Main Audio
Monitor Out
A
Monitor Out
B
Sub Audio

(Note)
When right and left Key are pushed, the sound of Main and Sub interchanges.
The picture and sound of the selected picture are outputted from Monitor out.
When the selected picture is Component or HDMI signal and audio out is monitor, monitor out is no picture and no audio.
When the selected picture is Component or HDMI signal and audio out is HiFi out, monitor out is no picture but audio is output.
When the selected picture is Composite Video signal, S-Video of monitor out is no picture.
When Macrovision signal is included in the ANT Digital channel, monitor out is no picture and no audio.

Input Mode		Monitor Out		
		S-Video	Video	L/R
ANT (AIR or CABLE)	Digital Channel	YES	YES	YES
	Analog Channel	—	YES	YES
Input 1	S-Video_1	YES	YES	YES
	Video_1	—	YES	YES
Input 2	YP$_B$P$_R$_2	—	—	—
	Video_2	—	YES	YES
Input 3	YP$_B$P$_R$_3	—	—	—
	Video_3	—	YES	YES
Input-Front	Video_Front	—	YES	YES
HDMI 1	HDMI_1	—	—	—
	DVI_1	—	—	—
HDMI 2	HDMI_2	—	—	—
	DVI_2	—	—	—
HDMI-Front	HDMI_Front	—	—	—
	DVI_Front	—	—	—
Photo Input		—	—	—

(4) PIP Position Operation


Key ▼
▲ Key
Key ▼
▲ Key
Key ▼
▲ Key


▲▼ Key
▲▼ Key
▲▼ Key
▲▼ Key

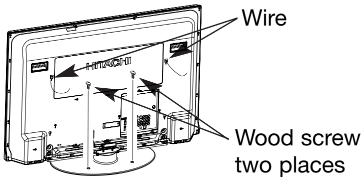
(Note)
The Sub screen position of POP Mode moves up and down by the upper and lower sides Key.
A Sub screen position of PIP Mode moves clockwise by the upper and lower sides Key.

How to set up your new HITACHI Plasma Television

To take measures to prevent the Plasma Television from tipping over and prevent possible injury it is important to mount the unit in a stable and flat surface.

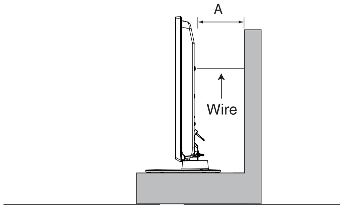
Securing to a table-top

1. Using wood screws (two) fasten the set to the clamping screw holes on the rear of the Plasma TV stand as shown below.
2. Using commercially available wood screws, secure the set firmly in position.



Securing to a Wall

1. Keep the Plasma television 4 inches away from the wall except when mounted using the wall mount bracket.
2. Secure the television to the wall as shown.



	A
50"	4 in. 10 cm

* Please adjust the wire length to avoid touching the wall when turning the TV.

NOTES: *1. Do not block the ventilation holes of the Plasma Television. Blocking the ventilation holes might cause fire or defect.*

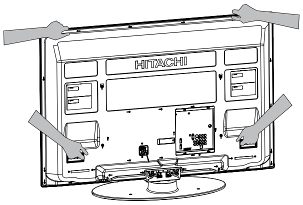
2. In case of an abnormal symptom, unplug the AC cord.

3. If you purchased the wall mount bracket option, please ask for professional installer. Do not install by yourself.

4. Install the unit at a proper area where it does not expose anyone to any danger of hitting themselves (for example their hands, head or face, etc.) against the edge of the unit and cause personal injury.

Caution when moving the main unit

As this product is heavy, whenever it is moved, two people arerequired to transport it safely. Whenever the unit is moved it should be lifted forward using the top and base on both sides of the Television for stability. When moving the Television, lift the handles , then support the top frame as shown below.



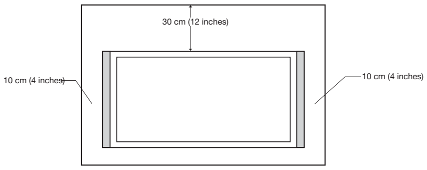
50”

ANTENNA

Unless your Plasma Television is connected to a cable TV system or to a centralized antenna system, a good outdoor color TV antenna is recommended for best performance. However, if you are located in an exceptionally good signal area that is free from interference and multiple image ghosts, an indoor antenna may be sufficient.

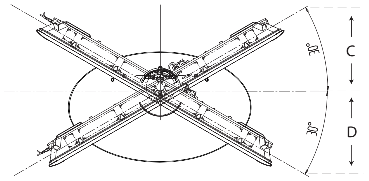
LOCATION

Select an area where sunlight or bright indoor illumination will not fall directly on the picture screen. Also, be sure that the location selected allows a free flow of air to and from the perforated back cover of the set. In order to prevent an internal temperature increase, maintain a space of 10 cm (4 inches) from the sides/back of the Television, and 30 cm (12 inches) from the top of the television to the wall. To avoid cabinet warping, cabinet color changes, and increased chance of set failure, do not place the TV where temperatures can become excessively hot, for example, in direct sunlight or near a heating appliance, etc.



TURNING RADIUS

The maximum turning radius is 30˚ (left and right). Do not place any objects on the path of the monitor when using the swivel feature.



	C	D
50"	15 in. 38.1 cm	16.85 in. 42.8 cm

How to set up your new HITACHI Plasma Television

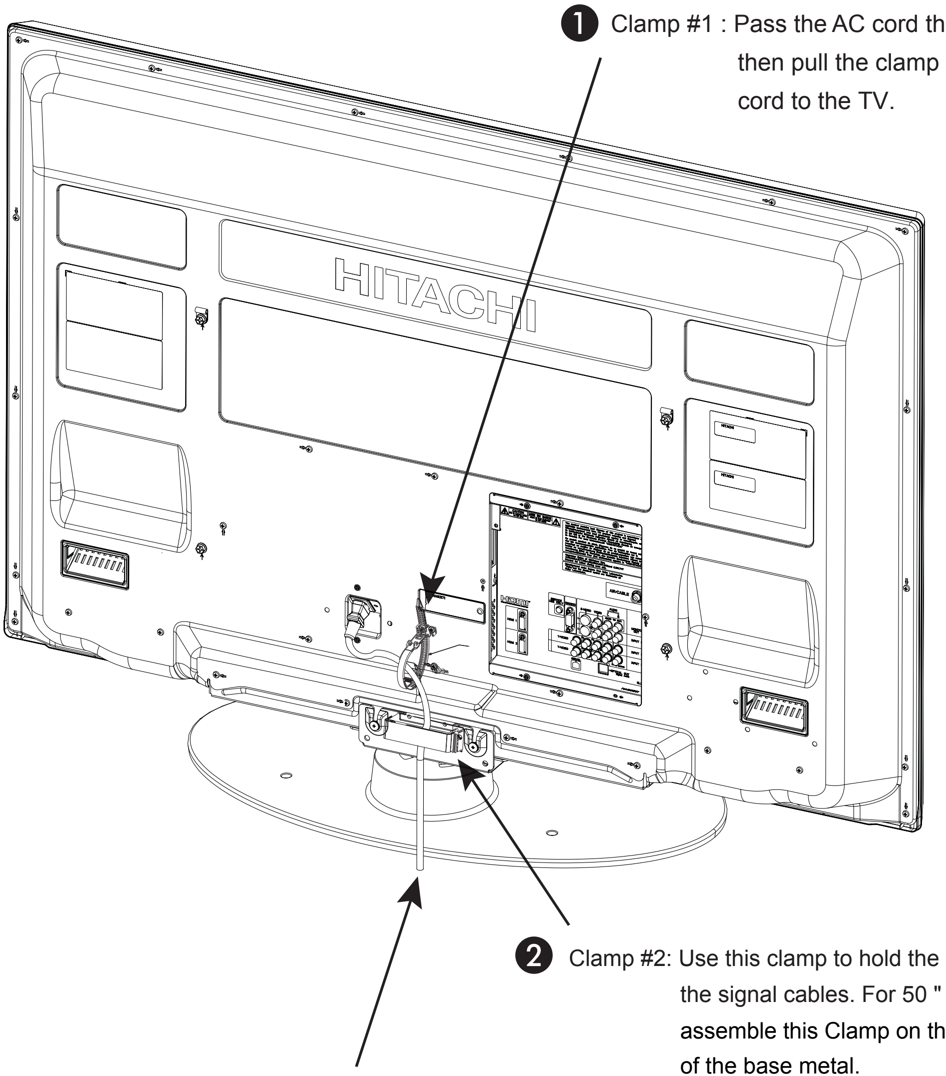
AC CORD INSTALLATION INSTRUCTION

The AC cord provided with your new Plasma Television needs to be installed correctly to avoid the AC cord from disconnecting when rotating the TV on its Table top stand. Located on the back of the TV are 2 plastic clamps to hold the AC cord. Please follow the instructions below.

❶ Pass the AC cord through Clamp #1 and connect AC cord to the TV.

❷ The AC cord and the signal cables can all be held together with Clamp #2.

❸ Depend on the model size 42", 50" or 55", the clamp may be different shapes. Only for 50" models the clamp #2 will be included on the accessories bag.



❶ Clamp #1 : Pass the AC cord through this clamp ; then pull the clamp to tighten the AC cord to the TV.

❷ Clamp #2: Use this clamp to hold the AC cord and the signal cables. For 50 " model please assemble this Clamp on the middle hole of the base metal.

AC CORD

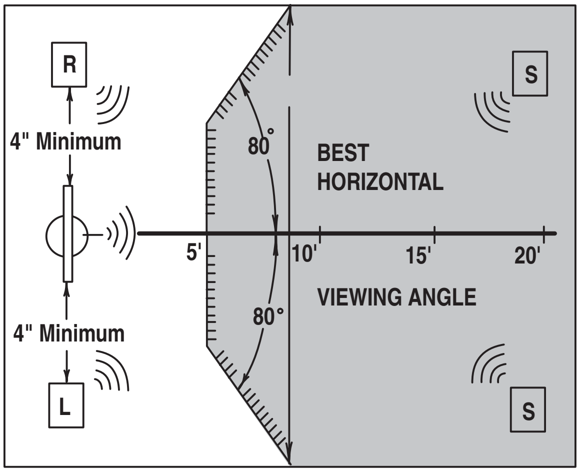
How to set up your new HITACHI Plasma Television

VIEWING

The best picture is seen by sitting directly in front of the TV and about 10 to 18 feet from the screen.

During daylight hours, reflections from outside light may appear on the screen. If so, drapes or screens can be used to reduce the reflection or the TV can be located in a different section of the room.

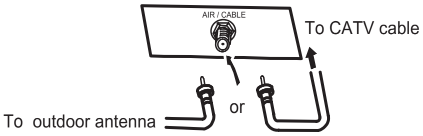
If the TV's audio output will be connected to a Hi-Fi system's external speakers, the best audio performance will be obtained by placing the speakers equidistant from each side of the receiver cabinet and as close as possible to the height of the picture screen center. For best stereo separation, place the external speakers at least four feet from the side of the TV, place the surround speakers to the side or behind the viewing area. Differences in room sizes and acoustical environments will require some experimentation with speaker placement for best performance.



ANTENNA CONNECTIONS TO REAR JACK PANEL

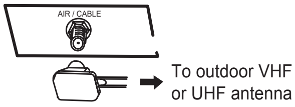
VHF (75-Ohm) antenna/CATV (Cable TV)

When using a 75-Ohm coaxial cable system, connect **CATV** coaxial cable to the AIR/CABLE (75-Ohm) terminal. Or if you have an antenna, connect the coaxial cable to the same AIR/CABLE terminal.



VHF (300-Ohm) antenna/UHF antenna

When using a 300-Ohm twin lead from an outdoor antenna, connect the **VHF** or **UHF** antenna leads to screws of the **VHF** or **UHF** adapter. Plug the adapter into the antenna terminal on the TV.



When both VHF and UHF antennas are connected

Attach an optional antenna cable mixer to the TV antenna terminal, and connect the cables to the antenna mixer. Consult your dealer or service store for the antenna mixer.

To UHF antenna

AIR / CABLE

To outdoor antenna or CATV system

Antenna Mixer

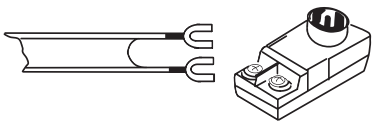
NOTE: *Connecting a 300-Ohm twin lead connector may cause interference. Using a 75-Ohm coaxial cable is recommended.*

Hook-up Cables and Connectors

Most video/audio connections between components can be made with shielded video and audio cables that have phono connectors. For best performance, video cables should use 75-Ohm coaxial shielded wire. Cables can be purchased from most stores that sell audio/video products. Below are illustrations and names of common connectors. Before purchasing any cables, be sure of the output and input connector types required by the various components and the length of each cable.

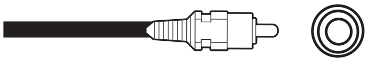
300-Ohm Twin Lead Cable

This outdoor antenna cable must be connected to an antenna adapter (300-Ohm to 75-Ohm).



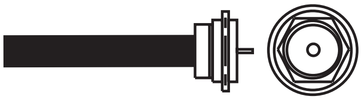
Phono Cable

Used on all standard video and audio cables which connect to inputs and outputs located on the television's rear jack panel and front control panel.



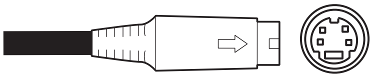
"F" Type 75-Ohm Coaxial Antenna

For connecting RF signals (antenna or cable TV) to the antenna jack on the television.



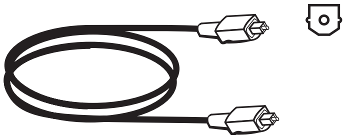
S-Video (Super Video) Cable

This connector is used on camcorders, VCRs and laser-disc players with an S-Video feature in place of the standard video cable to produce a high quality picture.



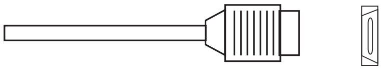
Optical Cable

This cable is used to connect to an audio amplifier with an Optical Audio In jack. Use this cable for the best sound quality.



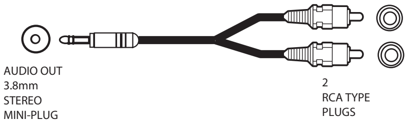
HDMI Cable

This cable is used to connect your external devices such as Set-Top-Boxes or DVD players equipped with an **HDMI** output connection to the TV's **HDMI** input.



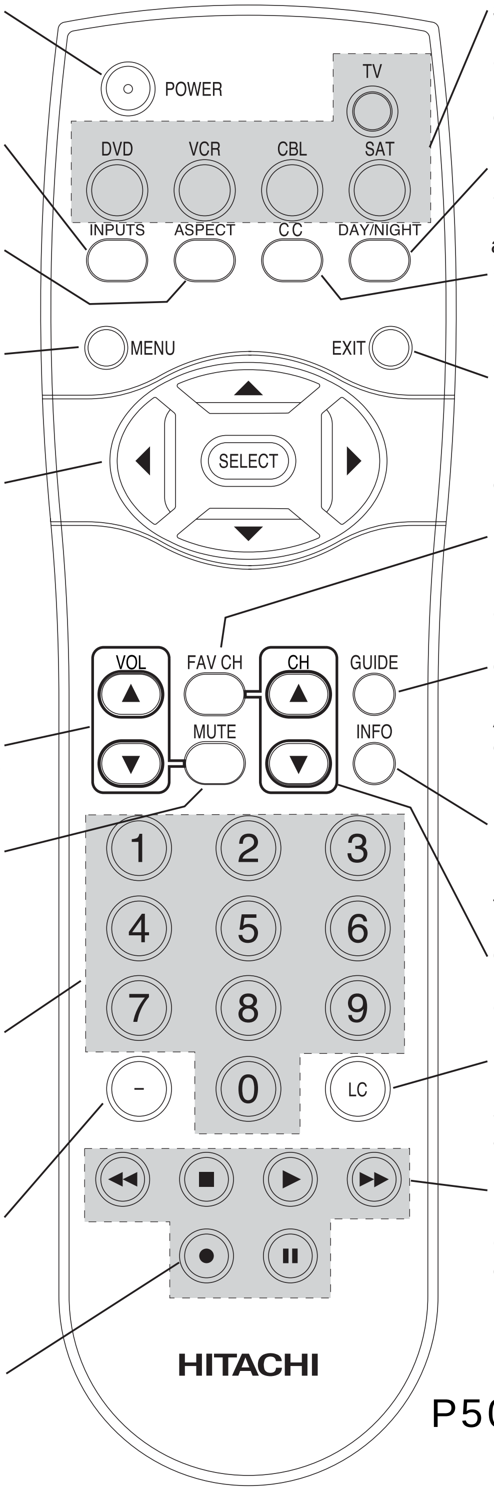
Stereo Cable (3.8mm plug to 3.5mm plug)

Used on all standard video and audio cable which connect to inputs and outputs located on the rear jack panel and front control panel.



Quick Reference Remote Control Buttons and Functions

In addition to controlling all of the functions on your HITACHI Plasma TV, the new remote control is designed to operate different types of devices, such as, DVD Players, CBL (Cable Boxes), set-top-boxes, satellite receivers, and VCRs. The remote control must be programmed to control the chosen device.



POWER BUTTON (TV, CBL, VCR, DVD, SAT)
Turns the selected device on and off.

INPUTS BUTTON (TV)
Accesses the INPUTS menu system.

ASPECT BUTTON (TV)
Changes the aspect ratio while watching TV.

MENU BUTTON (CBL, DVD, SAT, TV)
Accesses the OSD menu system.

CURSOR/SELECT BUTTONS (TV, DVD, CBL, SAT)
The CURSOR buttons are used to navigate the cursor through the OSD and INPUTS menu systems, and the SELECT button is used to Select/Activate the highlighted menu item.

VOLUME BUTTONS (TV)
Adjusts the audio level of your TV.

MUTE BUTTON (TV)
Reduces the audio level to 50% if pressed once, and to complete mute if pressed twice. Press it a third time to restore audio level.

NUMERIC BUTTONS (TV, DVD, CBL, SAT, VCR)
Used to manually enter the TV channel, and used for numeric entry when navigating through the OSD menu system.

(-) BUTTON (TV, SAT)
The (-) button is used when the remote is in Set-Top-Box (STB) mode or when the TV uses a digital input.

RECORD BUTTON (VCR)
Press twice (2 times) to record programs.

SOURCE ACCESS BUTTONS (TV, DVD, VCR, CBL, SAT)
Changes the mode of the Universal Remote Control to control the device selected.

DAY/NIGHT BUTTON (TV)
Select picture mode settings between DAY normal, DAY dynamic and NIGHT mode.

CC BUTTON (TV)
Press to show and change the Closed Caption mode.

EXIT BUTTON (TV, CBL, SAT)
Exits out of the OSD or INPUTS menu systems if their menu is displayed.

FAVORITE CHANNEL (FAV CH) button (TV)
Press to enter/access Favorite Channel (FAV) mode.

GUIDE BUTTON (SAT/STB, CBL)
Accesses the program guide of other devices.

INFO BUTTON (TV, CBL, SAT)
Displays various information on the screen.

CHANNEL BUTTONS (TV, CBL, SAT, VCR)
Changes the channel.

LAST CHANNEL (LC) BUTTON (TV, CBL, SAT)
Switches between the current and last channel viewed.

DVD/VCR CONTROL BUTTONS (DVD, VCR)
Controls the precode functions of your VCR and DVD.

P50H401/P50H4011 Models

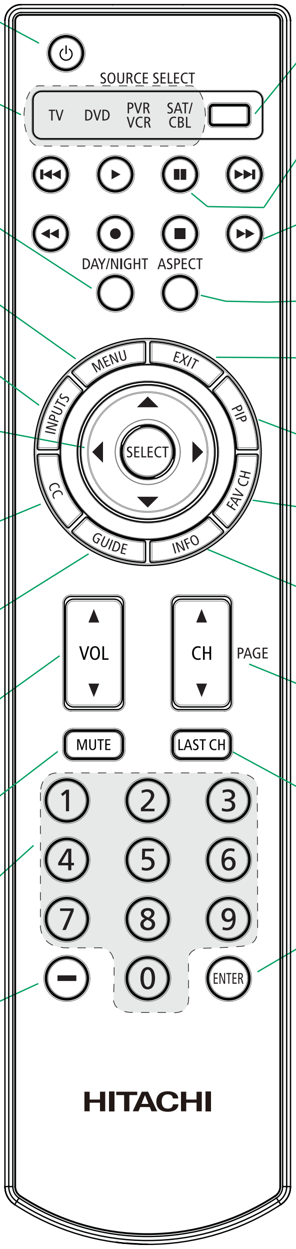
LEGEND

TV — Television	**VCR** — Video Cassette Recorder/Player	**SAT** — Satellite Receiver
CBL — Cable Box	**DVD** — Digital Video Disc Player	

NOTES: 1. *The TV's remote control sensor is located on the right bottom portion of the TV screen. To control TV functions, please point the remote control directly at the remote control sensor for best results.*

Quick Reference Remote Control Buttons and Functions

In addition to controlling all of the functions on your HITACHI Plasma TV, the new remote control is designed to operate different types of devices, such as, DVD Players, CBL (Cable Boxes), set-top-boxes, satellite receivers, and VCRs. The remote control must be programmed to control the chosen device.



POWER BUTTON
(TV, DVD, SAT/CBL,PVR/VCR)
Turns the selected device on and off.

MODE INDICATOR
Turns on or blinks to show remote control mode when the SOURCE ACCESS buttons are pressed.

DAY/NIGHT BUTTON
(TV)
Toggles picture mode settings between DAY normal, DAY dynamic and NIGHT mode.

MENU BUTTON
(TV,DVD,SAT/CBL,PVR/VCR)
Accesses the OSD menu system.

INPUTS BUTTON
(TV)
Accesses the INPUTS menu system.

CURSOR PAD/SELECT BUTTON
(TV, DVD, SAT/CBL,PVR/VCR)
The Cursor Pad is used as a cursor to navigate through the OSD and INPUT menu systems. The Select button is used to Select/Activate highlighted menu items.

Closed Caption (CC) BUTTON
(TV)
Press to show and change the Closed Caption mode.

GUIDE BUTTON
(SAT/CBL, PVR)
Accesses the program guide of other devices.

VOLUME BUTTONS
(TV)
Increase up and decrease down to adjust the audio level of your TV.

MUTE BUTTON (TV)
Reduces the audio level to 50% if pressed once, and to complete mute if pressed twice. Press it a third time to restore audio level.

NUMERIC BUTTONS
(TV, DVD, SAT/CBL, PVR/VCR)
Used to manually enter the TV channel, and used for numeric entry when navigating through the the OSD, INPUTS.

(-) BUTTON
(TV,STB)
The (-) button is used when the remote is in Set-Top-Box (STB) mode or when the TV uses a digital input.

SOURCE SELECT BUTTON
(TV, DVD, PVR/VCR, SAT/CBL)
Changes the mode of the Universal Remote Control to control the device selected.

PAUSE BUTTON
(TV,PVR/VCR, DVD)
Press to show and change the Freeze mode of the TV. Also used to pause other devices when the remote is in DVD, PVR/VCR.

DVD/VCR CONTROL BUTTONS
(DVD, PVR/VCR)
Controls the functions of your VCR, DVD and audio devices.

ASPECT BUTTON
(TV)
Changes the aspect ratio of the TV.

EXIT BUTTON
(TV, SAT/CBL, PVR/VCR)
Exits out of the OSD, INPUTS systems if their menu is displayed.

PIP CONTROL BUTTON
(TV)
Press to show and change the Picture-in-Picture mode.

FAVORITE CHANNEL
(FAV CH) button (TV)
Press to enter/access Favorite Channel (FAV CH) mode.
(Favorite channel is only available for TV mode.)

INFO BUTTON
(TV, STB, CBL, PVR)
Displays various information on the screen, such as channel information.

CHANNEL UP & DOWN BUTTONS
(TV, CBL, STB, PVR/VCR)
Changes up or down the channel.

LAST CHANNEL BUTTON
(TV, SAT/CBL, PVR)
Switches between the current and last channel viewed.

ENTER BUTTON
Press to use as SELECT feature.
Can only be used on TV mode.

P50T501 Model

LEGEND

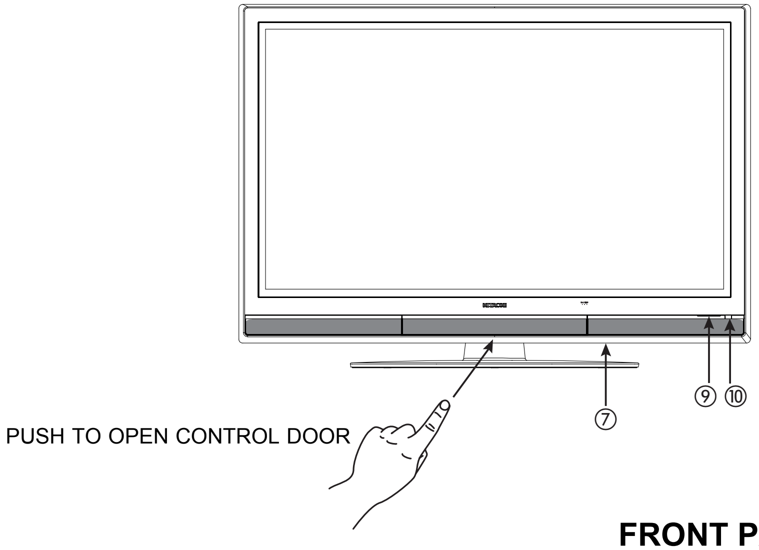
TV – Television	**PVR** – Video Recorder/Player
CBL – Cable Box	**DVD** – Digital Video Disc Player
SAT – Satellite	**VCR** – Videocassete Recorder/Player

NOTES:

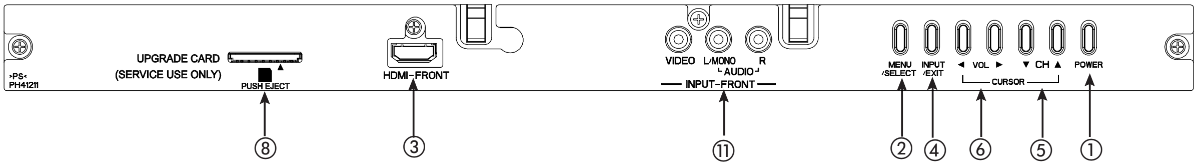
1. **The TV's remote control sensor is located on the right bottom portion of the TV screen. To control TV functions, please point the remote control directly at the remote control sensor for best results.**
2. **VCR precode is included in the PVR mode.**

Front Panel Controls

FRONT VIEW



FRONT PANEL CONTROLS



① FRONT POWER button
Press this button to turn the Plasma Television ON/OFF. It can also be turned ON/OFF by remote control. The "MAIN POWER" button must be at stand-by mode.

② **MENU/SELECT button**
This button allows you to enter the MENU, making it possible to set TV features to your preference without using the remote. This button also serves as the SELECT button when in MENU mode.

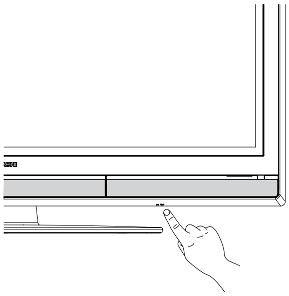
③ HDMI-FRONT
Use the front HDMI input for extrenal devices such as Set-Top-Boxes or DVD players equipped with an HDMI output connection (see page 33 for reference).

④ **INPUT/EXIT button**
Press this button to access the INPUT menu. Press again to exit the MENU mode.

⑤ **CHANNEL selector**
Press these buttons until the desired channel appears in the top right corner of the TV screen. These buttons also serve as the cursor down (▼) and up (▲) buttons when in MENU mode.

⑥ **VOLUME level**
Press these buttons to adjust the sound level. The volume level will be displayed on the TV screen. These buttons also serve as the cursor left (◄) and right (►) buttons when in MENU mode.

⑦ **POWER button**
Television MAIN POWER button
This power button is for the complete system, and must be turned ON/OFF manually. It is recommended to leave the "MAIN POWER" to ON condition (lights red) for stand-by mode.



The Main Power button is located on the broadside bottom, under the mark "⏻".

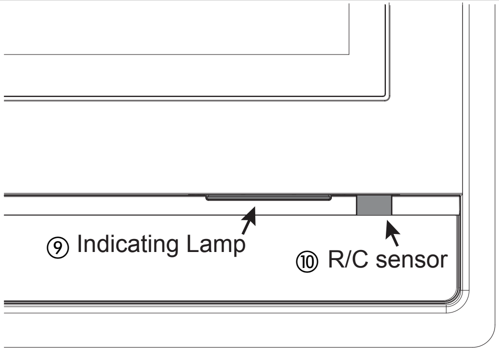
NOTE: *When the "MAIN POWER" button is set to OFF or the TV is unplugged, the clock will stop and may eventually reset itself.*

⑧ Upgrade Card
This card slot is for future software upgrades. Hitachi will notify you if a software upgrade is required for your TV. In order to receive written notification, please complete and return your warranty card.

SERVICERS: Please check the Web Site frequently for current software version.
http://www.hitachiserviceusa.com

Front Panel Controls

⑨ **POWER light indicator**
To turn the TV ON, press the main power switch located on the lower right side of the TV. A red stand-by indicator lamp located on the lower right corner of the front bezel will illuminate. The Plasma TV is now ready for remote ON/OFF operation.



Indicating Lamp	Power Status	Operating
Off	OFF.	When the main power switch is set to Off.
Lights Red	OFF. (Stand-by)	When the main power switch on the TV is ON.
Lights Blue	On	TV MAIN POWER is ON ; picture is shown.
Lights Orange	Off (Power Saving)	TV MAIN POWER is ON with no signal input except antenna (no sync. signal).
Blinking Blue 3 times	On	When TV receive the IR signal once from R/C.

⑩ **REMOTE CONTROL sensor**
Point your remote at this area when selecting channels, adjusting volume, etc.

⑪ **INPUT- FRONT JACKS**
INPUT- FRONT provide composite Video jacks for connecting equipment with this capability, such as a DVD player or Camcorders.

NOTES: ***1. Your HITACHI Plasma TV will appear to be turned OFF (lights orange) if there is no video input when INPUT : 1, 2, 3, Front and HDMI 1, 2 , Front. Check the Power Light to make sure the TV is turned off or in Stand-by mode (lights red) when not in use.***
2. Remote Control can not turn ON/OFF the "MAIN POWER" of the TV.

Rear Panel Connections

① **Antenna Input**
To switch between Cable and Air input, go to the Channel Manager option to change the signal source CABLE or AIR.

② **Audio/Video Inputs 1, 2 and 3**
By using the INPUTS button, the CURSOR PAD (▲ and ▼), and the SELECT button or CURSOR PAD ▶ of the remote control, you can select each video source. Use the audio and video inputs to connect external devices, such as VCRs, camcorders, laserdisc players, DVD players etc. (if you have mono sound, insert the audio cable into the left audio jack).

③ **MONITOR OUT & AUDIO OUT**
These jacks provide fixed audio and video signals (CABLE/AIR or INPUTS) which are used for recording. Use the S-VIDEO output for high quality video output. Component signal to Input 2 and 3, and HDMI inputs will not have monitor output.

④ **Optical Out (Digital Audio)**
This jack provides Digital Audio Output for your audio device that is Dolby® Digital and PCM compatible, such as an audio amplifier.

NOTE: **Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.*

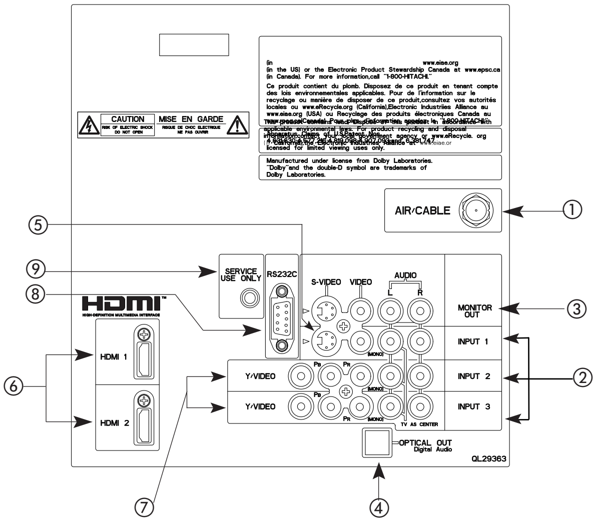
⑤ **S-VIDEO Input 1**
Input 1 provide S-VIDEO (Super Video) jacks for connecting equipment with S-VIDEO output capability.

NOTE: *1. You may use VIDEO or S-VIDEO inputs to connect to INPUT 1 , but only one of these inputs may be used at a time.*
2. S-VIDEO output may be used for recording, only when the input is of S-VIDEO type.

⑥ **HDMI 1, 2 (High Definition Multimedia Interface)**
ABOUT HDMI – HDMI is the next-generation all digital interface for consumer electronics. **HDMI** enables the secure distribution of uncompressed high-definition video and multi-channel audio in a single cable. Because digital television (DTV) signals remain in digital format, **HDMI** assures that pristine high-definition images retain the highest video quality from the source all the way to your television screen.

Use the **HDMI** input for your external devices such as Set-Top-Boxes or DVD players equipped with an **HDMI** output connection.

***HDMI**, the **HDMI** logo and High-Definition Multimedia Interface are trademarks or registered trademarks of **HDMI** Licensing LLC.*



CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
MISE EN GARDE
RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
(in www.eiae.org
(in the US) or the Electronic Product Stewardship Canada at www.epsc.ca
(in Canada). For more information,call "1-800-HITACHI."
Ce produit contient du plomb. Disposez de ce produit en tenant compte des lois environnementales applicables. Pour de l'information sur le recyclage ou manière de disposer de ce produit,consultez vos autorités locales ou www.eRecycle.org (California),Electronic Industriies Alliance au www.eiae.org (USA) ou Recyclage des produits électroniques Canada au
licensed for limited viewing uses only.
Manufactured under license from Dolby Laboratories. "Dolby"and the double-D symbol are trademarks of Dolby Laboratories.
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE
HDMI 1
HDMI 2
Y/VIDEO
Y/VIDEO
PB
PR
(MONO)
TV AS CENTER
OPTICAL OUT
Digital Audio
QL29363
①
②
③
④
⑤
⑥
⑦
⑧
⑨

NOTE: *1. The HDMI input is not intended for use with personal computers.*
2. Only DTV formats such as 1080p, 1080i, 720p, 480i and 480p are available for HDMI input.

⑦ **Component: Y-PBPR Inputs**
INPUTS 2 and **3** provide Y-PBPR jacks for connecting equipment with this capability, such as a DVD player or Set Top Box. You may use composite video signal for both inputs.

NOTE: *1. Do not connect composite VIDEO and S-VIDEO to INPUT 1 at the same time. S-VIDEO has priority over VIDEO input.*
2. Your component outputs may be labeled Y, B-Y, and R-Y. In this case, connect the components B-Y output to the TV's PB input and the components R-Y output to the TV's PR input.
3. Your component outputs may be labeled Y-CBCR. In this case, connect the component CB output to the TV's PB input and the component CR output to the TV's PR input.
4. It may be necessary to adjust TINT to obtain optimum picture quality when using the Y-PBPR inputs.
5. To ensure no copyright infringement, the MONITOR OUT output will be abnormal, when using the Y-PBPR jacks and HDMI Input.
6. INPUT 2 , and 3 (Y/VIDEO) can be used for composite video and component video input.

⑧ **For Special AV control use only.**

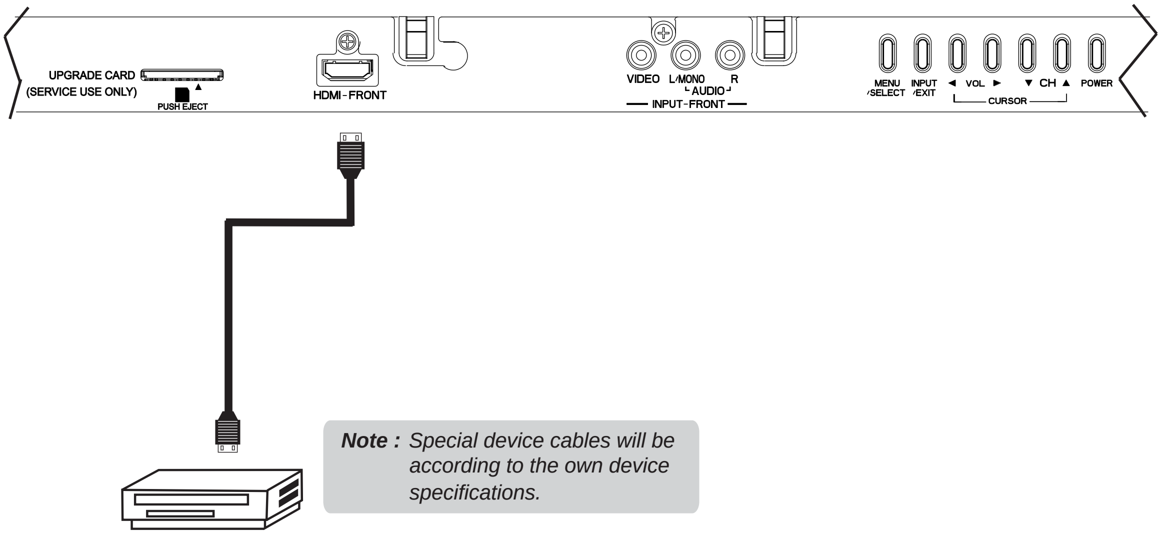
⑨ **For Factory use only.**

Connecting External Video Sources

The FRONT panel jacks are provided as a convenience to allow you to easily connect HDMI or DVI signals from a DVD, Set Top Box , Video Game as shown in the following examples (When connecting DVI signal it will need to connect the audio output into the Front Audio Input jacks) :

A) Connecting HDMI signal.

FRONT INPUT PANEL

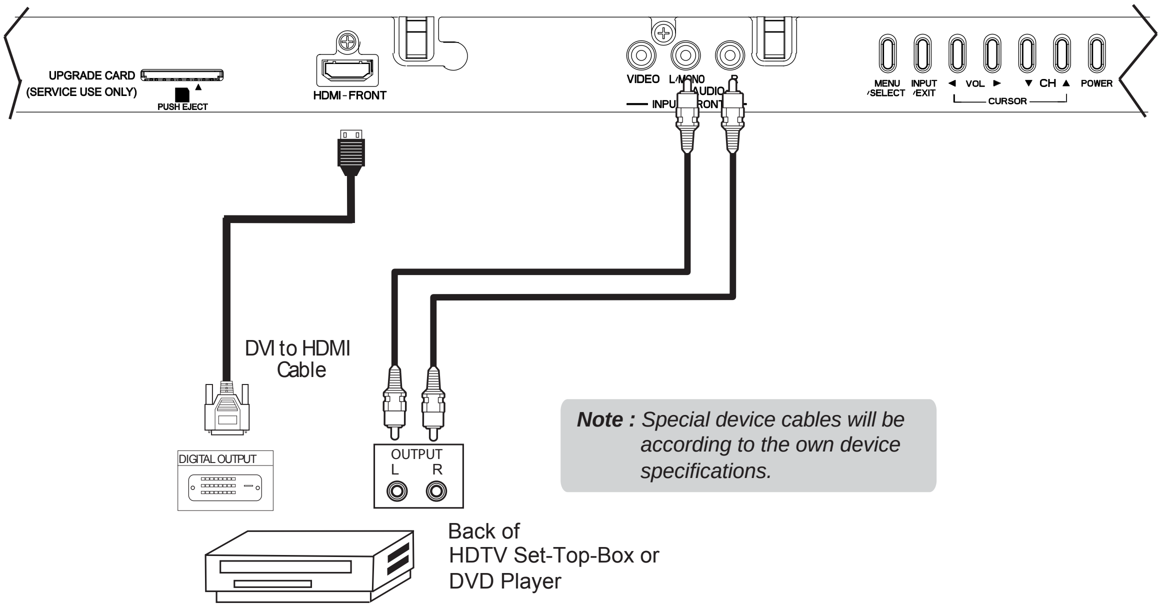

UPGRADE CARD
(SERVICE USE ONLY)
PUSH EJECT
HDMI - FRONT
VIDEO
L/MONO
R
AUDIO
INPUT - FRONT
MENU /SELECT
INPUT /EXIT
◄ VOL ►
▼ CH ▲
POWER
CURSOR

Note : *Special device cables will be according to the own device specifications.*

HDMI DIGITAL OUTPUT CAPABILITY DVD , Set Top Box, Video Game Console.

B) Connecting DVI signal.

FRONT INPUT PANEL


UPGRADE CARD
(SERVICE USE ONLY)
PUSH EJECT
HDMI - FRONT
VIDEO
L/MONO
AUDIO
INPUT - FRONT
MENU /SELECT
INPUT /EXIT
◄ VOL ►
▼ CH ▲
POWER
CURSOR
DVI to HDMI Cable
DIGITAL OUTPUT
OUTPUT
L
R

Note : *Special device cables will be according to the own device specifications.*

Back of
HDTV Set-Top-Box or
DVD Player

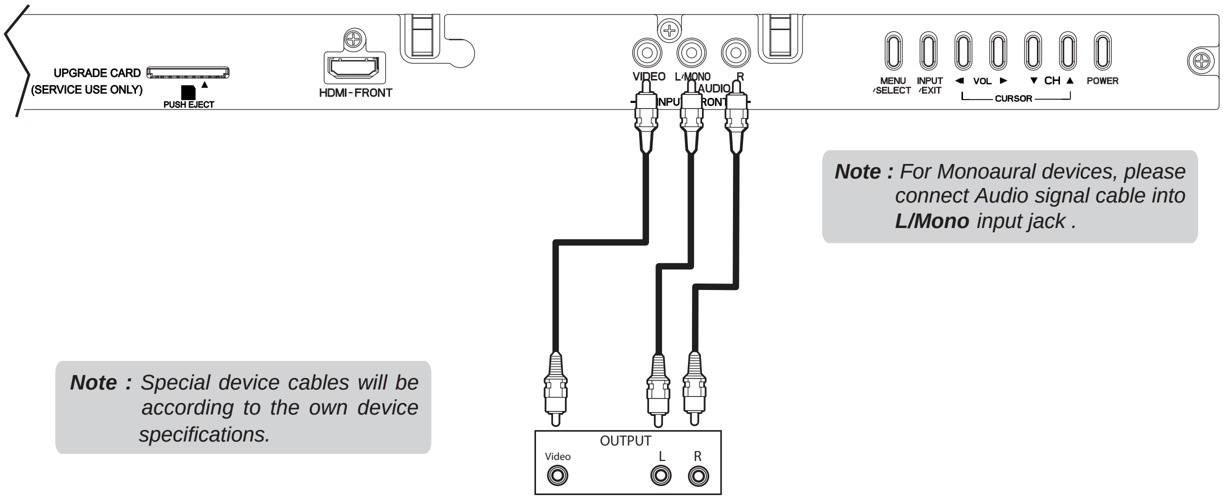
DVI DIGITAL OUTPUT CAPABILITY DVD , Set Top Box, Video Game Console.

NOTE: *1. Completely insert connection cord plugs when connecting to front panel jacks. If you do not, the played back picture may be abnormal.*

Connecting External Video Sources

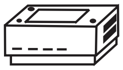
The FRONT panel jacks are provided as a convenience to allow you to easily connect a camcorder , DVD, Video Game and a VCR as shown in the following examples:

FRONT INPUT PANEL

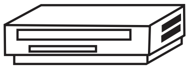

UPGRADE CARD
(SERVICE USE ONLY)
PUSH EJECT
HDMI - FRONT
VIDEO
L/MONO
R
AUDIO
INPUT
FRONT
MENU /SELECT
INPUT /EXIT
◄ VOL ►
▼ CH ▲
CURSOR
POWER
OUTPUT
Video
L
R

Note : *For Monoaural devices, please connect Audio signal cable into* ***L/Mono*** *input jack .*

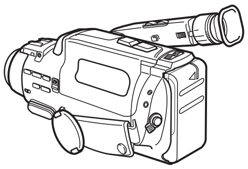
Note : *Special device cables will be according to the own device specifications.*



Video Game



COMPOSITE VIDEO OUTPUT CAPABILITY DVD , Video Game Console.



Video Camera

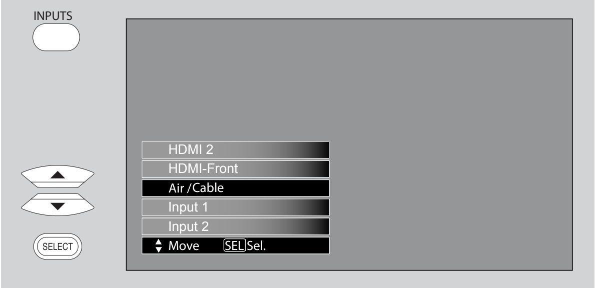
NOTE:1. Completely insert connection cord plugs when connecting to front panel jacks. If you do not, the played back picture may be abnormal.

The exact arrangement you use to connect the VCR, camcorder, laserdisc player, DVD player, or HDTV Set Top Box to your Plasma TV is dependent on the model and features of each component. Check the owner's manual of each component for the location of video and audio inputs and outputs.

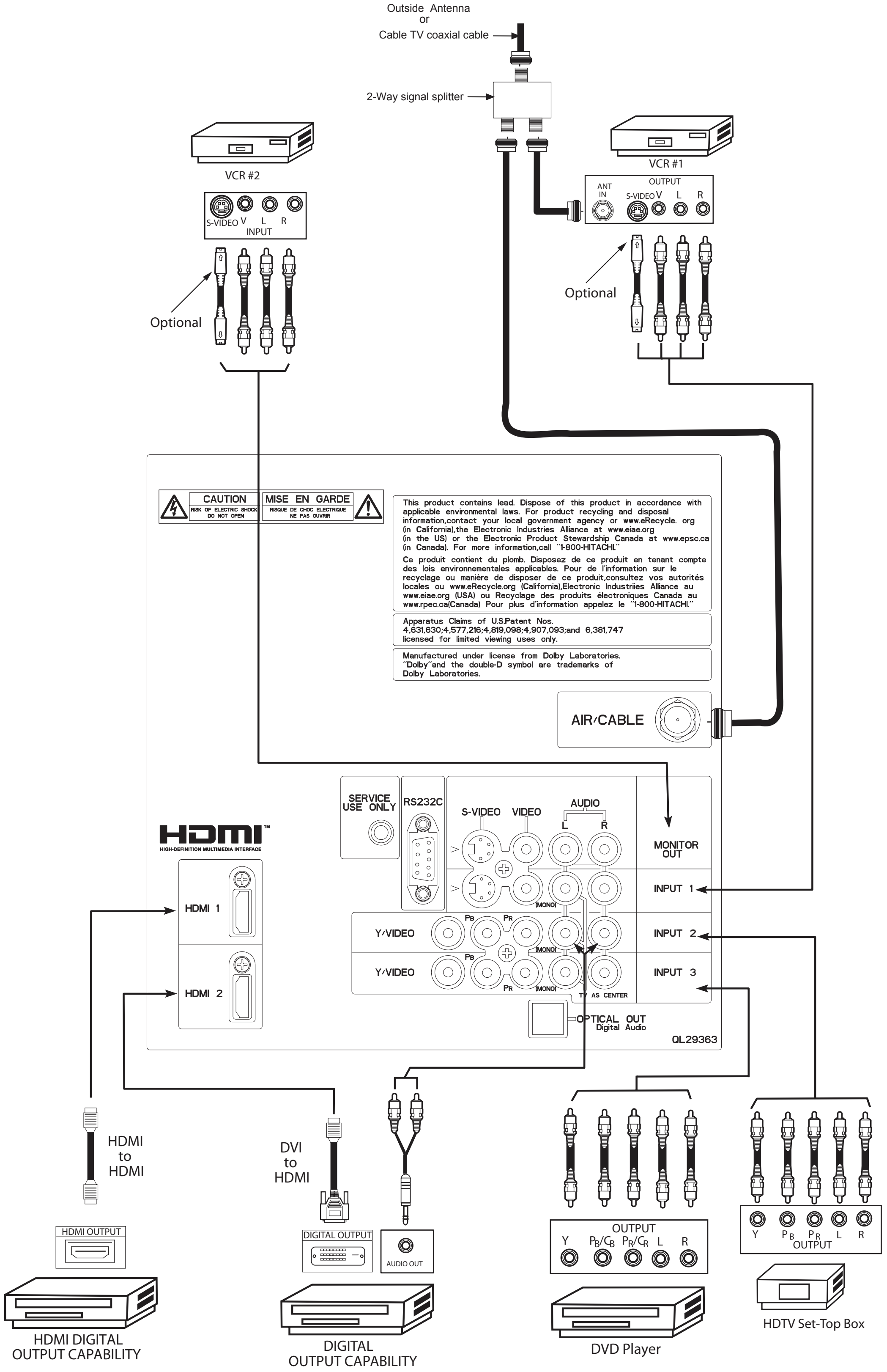
The following connection diagrams are offered as suggestions. However, you may need to modify them to accommodate your particular assortment of components and features. For best performance, video and audio cables should be made from coaxial shielded wire.

Before Operating External Video Source

Connect an external source to one of the INPUT terminals, then press the INPUTS button to show the INPUTS menu. Use the CURSOR PAD (▲ and ▼) to select the Input of your choice. Then press the SELECT button or the CURSOR PAD ► to confirm your choice.


INPUTS
SELECT
HDMI 2
HDMI-Front
Air /Cable
Input 1
Input 2
Move
SEL Sel.

Rear Panel Connections


Outside Antenna or Cable TV coaxial cable
2-Way signal splitter
VCR #2
S-VIDEO V L R INPUT
Optional
VCR #1
ANT IN
OUTPUT S-VIDEO V L R
Optional
CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN
MISE EN GARDE RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
This product contains lead. Dispose of this product in accordance with applicable environmental laws. For product recycling and disposal information,contact your local government agency or www.eRecycle. org (in California),the Electronic Industries Alliance at www.eiae.org (in the US) or the Electronic Product Stewardship Canada at www.epsc.ca (in Canada). For more information,call "1-800-HITACHI."
Ce produit contient du plomb. Disposez de ce produit en tenant compte des lois environnementales applicables. Pour de l'information sur le recyclage ou manière de disposer de ce produit,consultez vos autorités locales ou www.eRecycle.org (California),Electronic Industriies Alliance au www.eiae.org (USA) ou Recyclage des produits électroniques Canada au www.rpec.ca(Canada) Pour plus d'information appelez le "1-800-HITACHI."
Apparatus Claims of U.S.Patent Nos. 4,631,630;4,577,216;4,819,098;4,907,093;and 6,381,747 licensed for limited viewing uses only.
Manufactured under license from Dolby Laboratories. "Dolby"and the double-D symbol are trademarks of Dolby Laboratories.
AIR/CABLE
HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO L R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
(MONO)
PB PR
Y/VIDEO
TV AS CENTER
HDMI 1
HDMI 2
OPTICAL OUT Digital Audio
QL29363
HDMI to HDMI
DVI to HDMI
HDMI OUTPUT
DIGITAL OUTPUT
AUDIO OUT
OUTPUT Y PB/CB PR/CR L R
Y PB PR L R OUTPUT
HDMI DIGITAL OUTPUT CAPABILITY
DIGITAL OUTPUT CAPABILITY
DVD Player
HDTV Set-Top Box

NOTE: *Cables are optional, except when specified.*

Tips on Rear Panel Connections

- S-VIDEO, Y-PBPR, or HDMI connections are provided for high performance laserdisc players, VCRs etc. that have this feature. Use these connections in place of the standard video connection if your device has this feature.
- If your device has only one audio output (mono sound), connect it to the left audio jack on (L/(MONO)) the Rear Panel.
- Refer to the operating guide of your other electronic equipment for additional information on connecting your hook-up cables.
- A single VCR can be used for VCR #1 and VCR #2, but note that a VCR cannot record its own video or line output (INPUT: 1 in the example on page 35). Refer to your VCR operating guide for more information on line input-output connections.
- Connect only 1 component (VCR, DVD player, camcorder, etc.) to each input jack.
- COMPONENT: Y-P_BP_R (Input 2 & 3) connections are provided for high performance components, such as DVD players and set-top-boxes. Use these connections in place of the standard video connection if your device has this feature.
- Your component outputs may be labeled Y, B-Y, and R-Y. In this case, connect the components B-Y output to the TV's P_B input and the components R-Y output to the TV's P_R input.
- Your component outputs may be labeled Y-C_BC_R. In this case, connect the components C_B output to the TV's P_B input and the components C_R output to the TV's P_R input.
- It may be necessary to adjust TINT to obtain optimum picture quality when using the Y-P_BP_R inputs.
- To ensure no copyright infringement, the MONITOR OUT output will be abnormal, when using the Y-PBPR and HDMI input jacks.

- Input HDMI 1, HDMI 2 or HDMI FRONT can accept HDMI signal.
- S-VIDEO monitor output may be used for recording only when the input is of S-VIDEO type.
- When using a HDMI input from a Set-Top-Box, it is recommended to use a 1080p, 1080i or 720p input signal.
- When HDMI input a 1080p signal, the length of the cable should be less than 5 meters.

INSTALLATION RECOMMENDATION:

1. ***Video signals fed through a VCR may be affected by copyright protection systems and the picture will be distorted on the television.***
2. ***Connecting the television directly to the Audio /Video output of a Set-Top-Box will assure a more normal picture.***

Connecting External Video Sources

CONNECTING A VIDEO AND STEREO AUDIO SOURCE TO INPUT1 ~ INPUT-FRONT

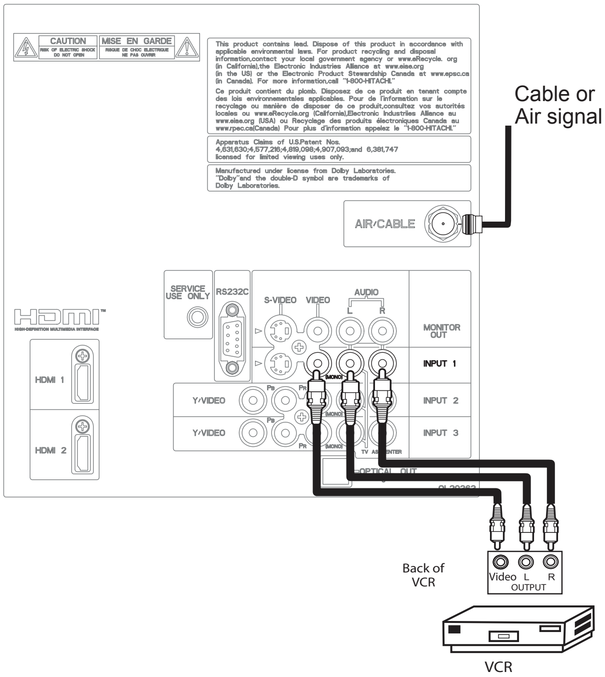
1. Connect the cable from the VIDEO OUT of the VCR or the laserdisc player to the INPUT (VIDEO) jack, as shown on the Rear Panel to the right.

2. Connect the cable from the AUDIO OUT R of the VCR or the laserdisc player to the INPUT (AUDIO/R) jack.

3. Connect the cable from the AUDIO OUT L of the VCR or the laserdisc player to the INPUT (AUDIO/L) jack.

4. Press the INPUTS button, then select INPUT 1 2,3 or Front from the INPUTS menu to view the program from the VCR or laserdisc player.

5. Select CABLE or AIR from the INPUTS menu to return to the last channel tuned.

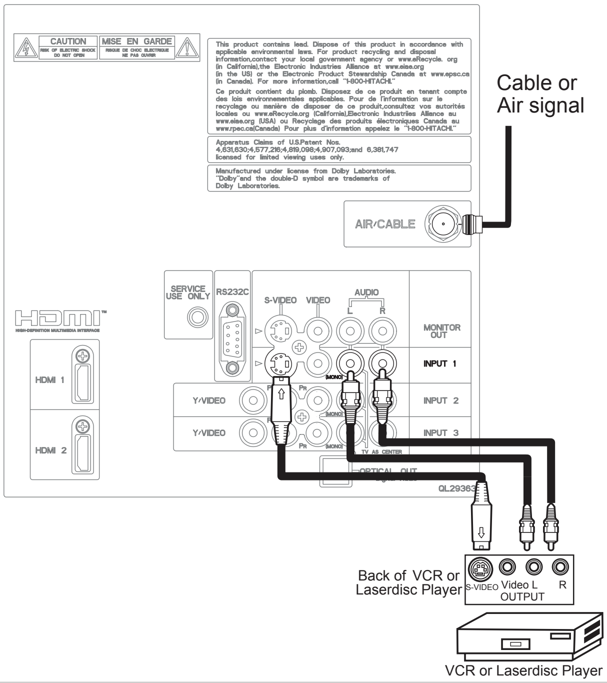

CAUTION
MISE EN GARDE
Cable or Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
HDMI 1
HDMI 2
OPTICAL OUT
Back of VCR
Video
L
R
OUTPUT
VCR

NOTE: 1. *Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*
2. *A single VCR can be used for VCR #1 and VCR #2 (see page 35) but note that a VCR cannot record its own video or line output. Refer to your VCR operating guide for more information on line input-output connections.*
3. *When INPUT 2 or 3 are used, it is necessary to connect the video output of the device to the Y/VIDEO input jack of the TV .*

CONNECTING AN S-VIDEO AND STEREO AUDIO SOURCE TO INPUT 1

1. Connect the cable from the S-VIDEO OUT of the S-VHS VCR or the laserdisc player to the INPUT (S-VIDEO) jack, as shown on the Rear Panel to the right.
2. Connect the cable from the AUDIO OUT R of the VCR or the laserdisc player to the INPUT (AUDIO/R) jack.
3. Connect the cable from the AUDIO OUT L of the VCR or the laserdisc player to the INPUT (AUDIO/L) jack.
4. Press the INPUTS button, then select INPUT 1 from the INPUTS menu to view the program from the VCR or laserdisc player.

5. Select CABLE or AIR from the INPUTS menu to return to the last channel tuned.


CAUTION
MISE EN GARDE
Cable or Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
HDMI 1
HDMI 2
OPTICAL OUT
QL29363
Back of VCR or Laserdisc Player
S-VIDEO
Video
L
R
OUTPUT
VCR or Laserdisc Player

NOTE: 1. *Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*
2. *A single VCR can be used for VCR #1 and VCR #2 (see page 35), but note that a VCR cannot record its own video or line output. Refer to your VCR operating guide for more information on line input-output connections.*

Connecting External Video Sources

CONNECTING A COMPONENT SOURCE WITH HDMI OR DVI CAPABILITY TO HDMI 1, HDMI 2 OR HDMI FRONT

1. Connect the HDMI or DVI to HDMI connection cable from the output of the HDTV set top box or DVD player to the HDMI input as shown on the Rear panel below.
2. With DVI output, connect the cable from the AUDIO OUT R of the HDTV set top box or DVD player to the INPUT (AUDIO/R) jack as shown on the Rear Panel below.
3. With DVI output, connect the cable from the AUDIO OUT L of the HDTV set top box or DVD player to the INPUT (AUDIO/L) jack as shown on the Rear Panel below.
4. Press the INPUTS button, then select HDMI 1, 2 or FRONT to view the program from the HDTV SET TOP BOX or DVD player.
5. Select CABLE or AIR from the INPUTS menu to return to the last channel viewed.

NOTE: *1. Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*

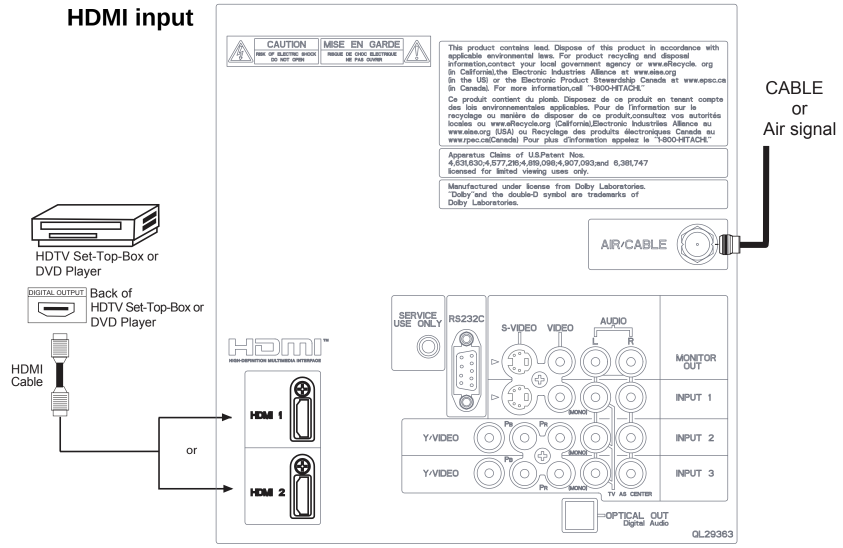
2. The HDMI input on HDMI 1 , 2 and FRONT contains the copy protection system called High-bandwidth Digital Content Protection (HDCP). HDCP is a cryptographic system that encrypts video signals when using HDMI connections to prevent illegal copying of video contents.

3. HDMI is not a "NETWORK" technology. It establishes a one-way point-to-point connection for delivery of uncompressed video to a display.

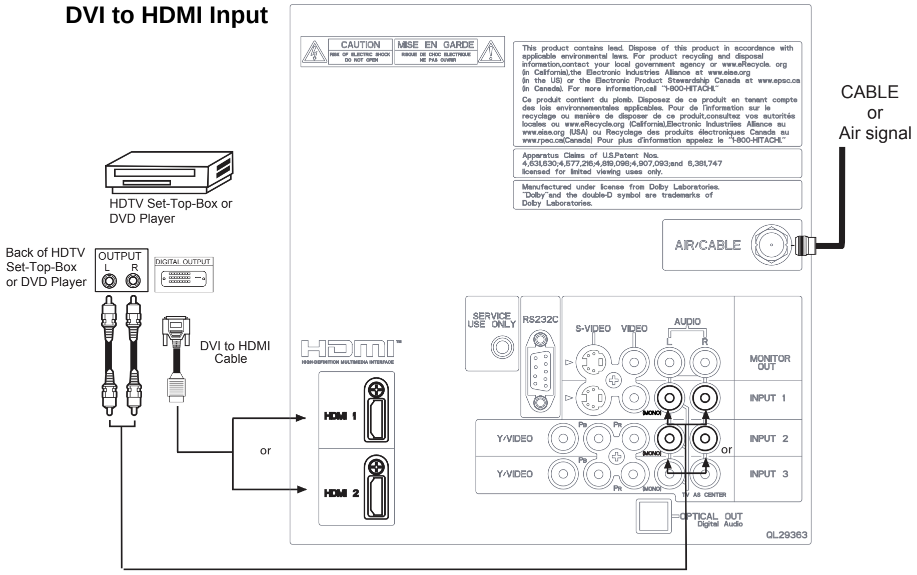
4. The connected digital output device controls the HDMI interface so proper set-up of device user settings determines final video appearance.

5. When using a DVI to HDMI cable, connect the Audio Out L and R cables at the same INPUT (1 , 2 or Front) as your HDMI INPUT(1 , 2 or Front). (For FRONT INPUT see page 33 for reference).

HDMI input


CABLE
or
Air signal
HDTV Set-Top-Box or
DVD Player
DIGITAL OUTPUT
Back of
HDTV Set-Top-Box or
DVD Player
HDMI
Cable
or
AIR/CABLE
HDMI 1
HDMI 2
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
OPTICAL OUT
QL29363

DVI to HDMI Input


CABLE
or
Air signal
HDTV Set-Top-Box or
DVD Player
Back of HDTV
Set-Top-Box
or DVD Player
OUTPUT
L R
DIGITAL OUTPUT
DVI to HDMI
Cable
or
AIR/CABLE
HDMI 1
HDMI 2
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
or
OPTICAL OUT
QL29363

Connecting External Audio/Video Devices

CONNECTING A COMPONENT AND STEREO AUDIO SOURCE TO INPUT 2 or 3 :Y-PBPR.

1. Connect the cable from the Y OUT of the Laserdisc/DVD player or HDTV set top box to the INPUT (Y) jack, as shown on the Rear panel below.

2. Connect the cable from the P_B/C_B OUT or B-Y OUT of the Laserdisc/DVD player or HDTV set top box to the INPUT (P_B) jack.

3. Connect the cable from the P_R/C_R OUT or R-Y OUT of the Laserdisc/DVD player or HDTV set top box to the INPUT (P_R) jack.

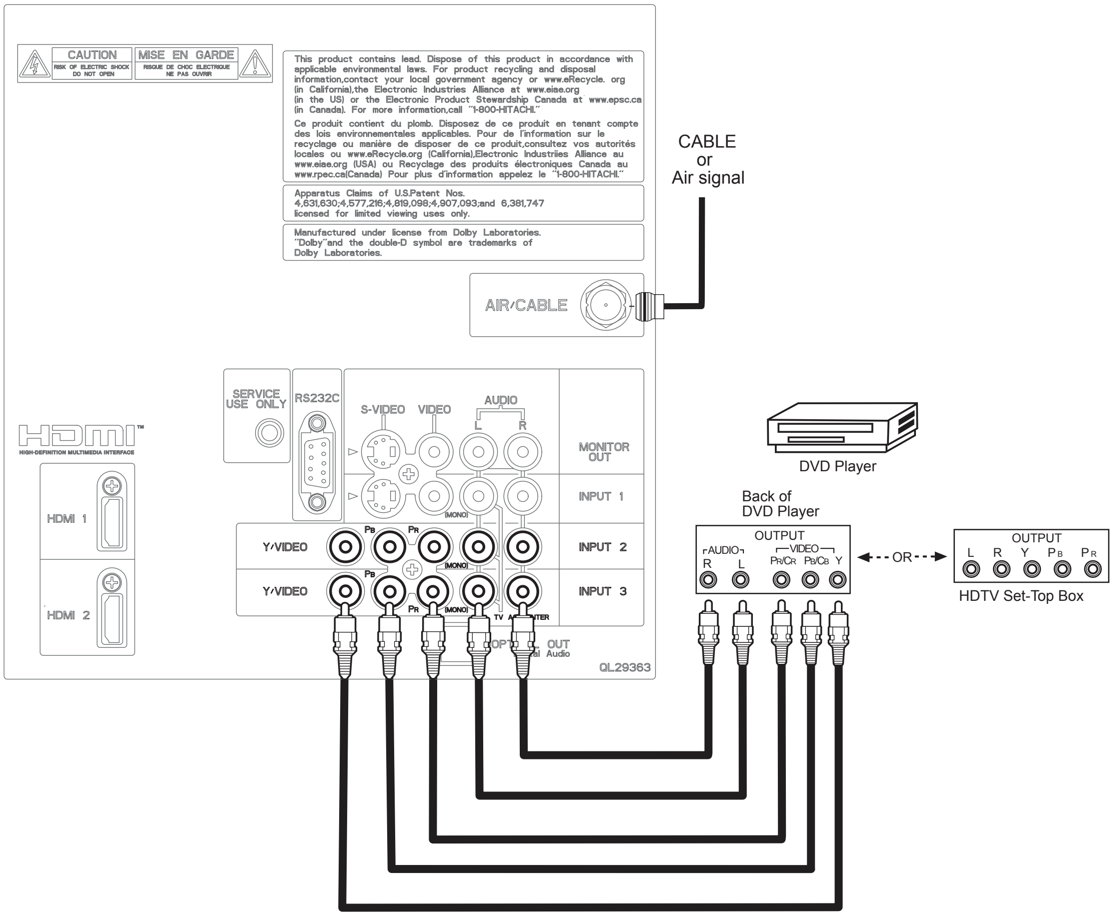
4. Connect the cable from the AUDIO OUT R of the Laserdisc/DVD player or HDTV set top box to the INPUT (AUDIO/R) jack.

5. Connect the cable from the AUDIO OUT L of the Laserdisc/DVD player or HDTV set top box to the INPUT (AUDIO/L) jack.

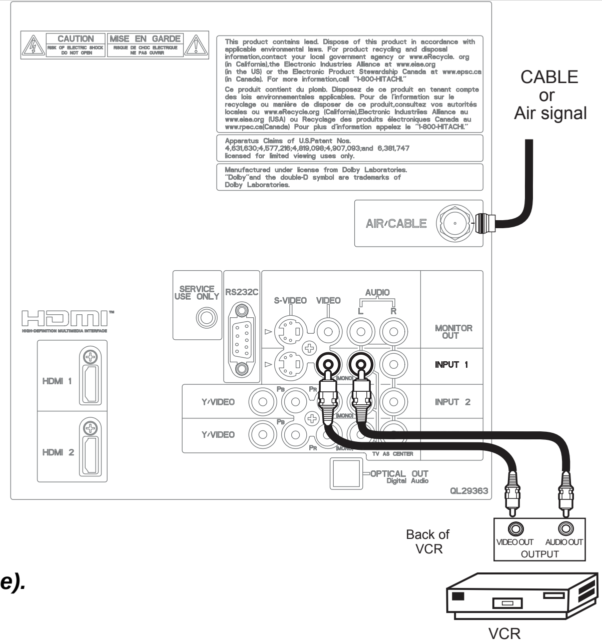
6. Press the INPUTS button, then select INPUT 2 or 3 from the INPUTS menu to view the program from the Laserdisc/DVD player or HDTV set top box.

7. Select CABLE or AIR to return to the last channel tuned.

NOTE: *1. Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*
2. See page 36 for tips on REAR PANEL CONNECTIONS.


CAUTION
MISE EN GARDE
AIR/CABLE
CABLE or Air signal
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
PB
PR
(MONO)
HDMI 1
HDMI 2
QL29363
DVD Player
Back of DVD Player
OUTPUT
AUDIO
VIDEO
R
L
PR/CR
PB/CB
Y
OR
L
R
Y
PB
PR
HDTV Set-Top Box

Connecting External Audio/Video Devices


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
MISE EN GARDE
RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
CABLE or Air signal
AIR/CABLE
HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE
HDMI 1
HDMI 2
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
Y/VIDEO
PB
PR
(MONO)
TV AS CENTER
OPTICAL OUT
Digital Audio
QL29363
Back of VCR
VIDEO OUT
AUDIO OUT
OUTPUT
VCR

CONNECTING A VIDEO AND MONAURAL AUDIO SOURCE TO INPUT 1 ~ FRONT INPUT

1. Connect the cable from the VIDEO OUT of the VCR or the laserdisc player to the INPUT (VIDEO) jack, as shown on the Rear Panel on the right.

2. Connect the cable from the AUDIO OUT of the VCR or the laserdisc player to the INPUT (MONO)/L(AUDIO) jack.

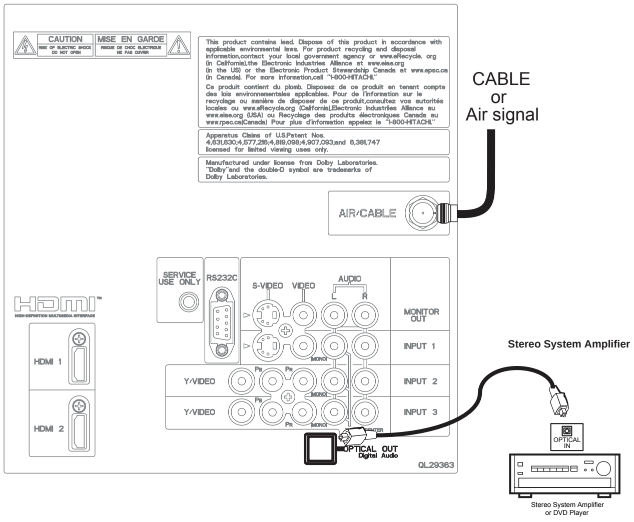
3. Press the INPUTS button, then select INPUT 1 2,3 or Front from the INPUTS menu to view the program from the VCR or the laserdisc player.

4. Select CABLE or AIR from the INPUTS menu to return to the previous channel.
   (For INPUT FRONT please see page 34 for reference).

CONNECTING AN EXTERNAL AUDIO AMPLIFIER

To monitor the audio level of the Plasma TV to an external audio amplifier, connect the system as shown on the right. The “OPTICAL OUT” from the Rear Panel is a fixed output. The Volume of the amplifier is controlled by the amplifier, not by the Plasma Television. The OPTICAL OUT terminal outputs all audio sources with Optical IN capability.

1. Connect an optical cable from the Optical out to the Optical input of a separate Stereo System Amplifier as shown on the Rear Panel on the right.


CAUTION
MISE EN GARDE
CABLE or Air signal
AIR/CABLE
HDMI
HDMI 1
HDMI 2
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
OPTICAL OUT
Digital Audio
QL29363
Stereo System Amplifier
OPTICAL IN
Stereo System Amplifier or DVD Player

CONNECTING MONITOR OUT

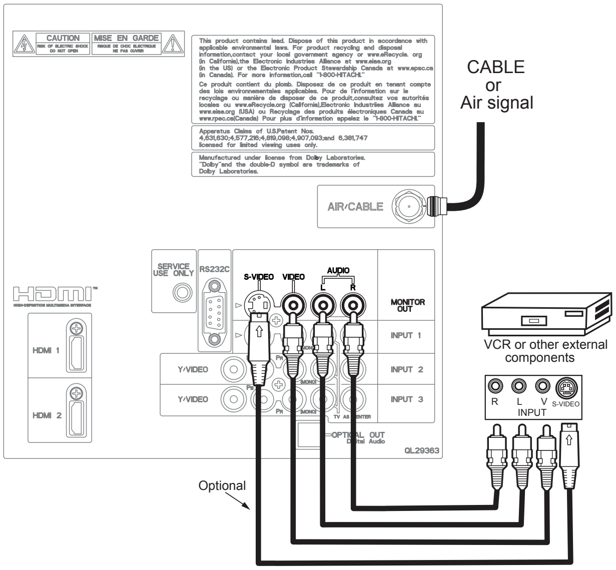
The MONITOR OUT terminal outputs video and audio of CABLE/AIR and INPUTS 1, 2, 3 and Front. It does not output component and HDMI video.

1. Connecting S-Video:
   Connect the cable from the S-VIDEO OUT of the Rear Panel to the INPUT (S-VIDEO) jack, of the VCR or Laserdisk player.

   Connecting Video:
   Connect the cable from the VIDEO INPUT of the VCR or the laserdisc player to the VIDEO out jack on the TV Rear Panel.

2. Connect the cable from the AUDIO IN R of the VCR or the laserdisc player to the OUTPUT (AUDIO/R) jack on the TV Rear Panel.

3. Connect the cable from the AUDIO IN L of the VCR or the laserdisc player to the OUTPUT (AUDIO/L) jack on the TV Rear Panel.


CAUTION
MISE EN GARDE
CABLE or Air signal
AIR/CABLE
HDMI
HDMI 1
HDMI 2
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
OPTICAL OUT
Digital Audio
QL29363
VCR or other external components
R
L
V
S-VIDEO
INPUT
Optional

NOTE: *When making video connections, connect S-Video only or Video only. If both are connected, S-Video takes priority.*

IMPORTANT NOTES

No.	Items	Notes
1	Arcing sound from plasma display monitor's panel.	A buzzing sound might be heard when the plasma display monitor is turned on in a very quiet room. This is due to the plasma panel drive circuit when it is functioning. This arcing sound is normal and it is not a malfunction.
2	Interference for infrared equipment.	Some infrared rays are emitted from the plasma display monitor's panel that might affect other infrared controlling equipment.
3	Bright and dark spots	High-precision technology is used to manufacture the plasma display panel; But in some cases, there are minor defects in some parts of the screen. Points that do not light, points with brightness different from that of the periphery, points with color different from that of the periphery, etc. Some pixels will always be on or always off. Please note that this is not a malfunction.
4	Picture Image (Spectrum)	When receving still picture signals, (e.g. channel number indication or clock indication) for a while, you can see image-like when the picture varied. This is not a defect.
5	Display panel surface temperature is too high	The plasma display panel is lighting the phosphors by the discharge of internal radiation. In some cases, this may cause the temperature of the panel surface to increase. Please note that this is not a malfunction. The Plasma TV surface temperature is higher than a Cathode-ray-tube.
6	Plasma Surface	The plasma panel is made from glass. Heavy shock on the front panel might damage it.
7	Transportation	When the PDP monitor is transported horizontally, the glass panel has the possibility of being broken or increasing the picture defects. At the time of transportation, horizontal style is prohibited. More-over, please treat the plasma panel with great care because of a precision apparatus. Please instruct transporters so that it should be put into the packing box at the time of shipment.(There is a possibility that breakage of the panel or defects will increase.) Rough transportation might cause damage to the panel and pixel failure.
8	Image retention	The plasma monitor illuminates phosphor to display images. The phosphor has a finite illumination life. After extended periods of illumination, the brightness of the phosphor will be degraded to such extent that stationary images would burn-in that part of the screen as grayed-out images. Tips to prevent such image retention are: - Do not display images having sharp brightness differences or hi-contrast images, such as monochrome characters and graphic patterns, for long. - Do not leave stationary images appearing for long, but try to refresh them at appropriate intervals of time, or try to move them using screen saver function. - Turn down the contrast and brightness controls.
9	Luminosity and contrast	PDP television has luminosity and low contrast compared with CRT television.
10	Granular spots	When a screen is seen at point-blank range, a random fine grain may be visible to a dark part.
11	Disturbance to video apparatus	If an apparatus (VCR, etc.) antenna line is arranged near the monitor, the image may shake, or disturbance may be received.
12	Lip Sync	There is some time lag betweeen the picture and the sound. You can see lip motion that is delayed compared to the sound.
13	About the use environment of PDP television (temperature)	Electric discharge/luminescence characteristic of the PDP panel also changes with peripheral temperature. Moreover, since there is also high power consumption value, a specified temperature environment is required.
14	Caution on prolonged storage	Storing the plasma television for a period of more than 2 to 3 months without use might cause an unstable picture when the set is turned on.
15	Operating	Operating altitude: 700 to 1114hPa (9,676ft to -2,484ft). Operating temperature: 41˚F to 95˚F.
16	Storage	Storage Altitude: 300 to 1114hPa (31,912 to -2,484ft). Storage temperature: 5˚F to 140˚F.
17	Power ON or OFF	Frequent use of the Power ON or OFF might trigger the power protection circuit. If the TV does not turn ON, please wait a little before turning ON again.

ADJUSTMENTS TABLE OF CONTENTS

TO GO TO A SECTION, CLICK ON ITS HEADING BELOW

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- 1.2 Changing data and selecting adjustment code 43

2 Memory initialize 43

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5 White balance adjustment 46

- 5.1 Video Color Temperature Adjustment (High) 46
- 5.2 Video Color Temperature Adjustment (Medium) 46
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9 Factory Reset 50

10 Settings for Delivery 51

1 ADJUSTMENT PROCEDURE START-UP

The P50H401, P50T501 and the P50H4011 PDP TV sets pass through adjustment procedures during the assembly process. These adjustments must be done to assure the best performance of the PDP set for the consumer.

Also, after servicing, these same adjustments must be done. The adjustments are all made through the I^2C bus by changing data in the Adjustment mode menu.

1.1 HOW TO GET TO ADJUSTMENT MODE

Chassis adjustment mode can be access by pressing the R/C keys MENU + MENU + 8 + SELECT to enter adjustment mode. For some parameters the only way to see them is by selecting the parameter number than press SELECT in order to see it; then DATA can be change if other parameter needs to change then press ▼ key then repeat the same procedure.

```
ADJUST MODE
FACT  RESET
MEMORY  INIT
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
```

To escape from Adjustment Mode press “INPUT” key on Front panel or EXIT key of R/C to exit service adjustment mode.

1.2 CHANGING DATA AND SELECTING ADJUSTMENT CODE

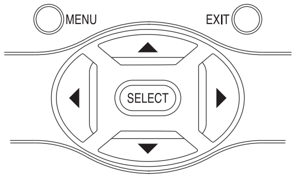
When the PDP set is in adjustment mode, the cursor ◀, ▶, ▲, ▼ and MENU keys of the remote control or front panel may be used as the adjustment keys.

(1) Use any Hitachi remote control when making an adjustment.

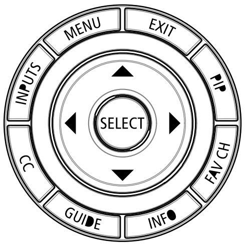
▲, ▼ keys are used for selecting adjustment item.

◀, ▶ keys are used for changing data values.

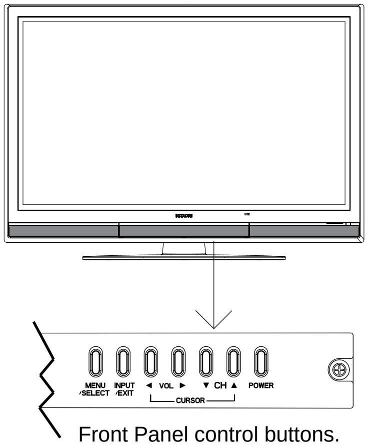
MENU key is used to advance through the adjustment mode menus and pages.



Part of H model's remote control



Part of T model's remote control



Front Panel control buttons.

(2) To make a selection, use the NUMBER pad on the PDP R/C ; example : select DEVICE press 69 then SELECT the DATA shown is "EB" ; if this DATA needs to be change press the ◀, ▶, keys to modify, when finish press SELECT key to store the new DATA value. normal condition.

(3) After finishing the necessary adjustment press the R/C EXIT key or EXIT key on the front panel. Adjustment mode is released and PDP set returns to normal condition.

2 MEMORY INITIALIZE

2.1 MEMORY INITIALIZE OPERATION

NOTE: The execution of this function returns the adjustment codes to the preset values, therefore, **adjustment data will be lost**.

Procedure

(1) Enter Adjustment mode by the method described in sub-items 1.1 and 1.2 from item 1 (“Adjustment procedure start up”).

(2) Get to the second page of Adjust Mode by pressing remote control “Menu” key once, or with either the R/C or front panel ▲, ▼ cursor keys several times.

(3) Select MEMORY INIT adjust code.

(4) Activate MEMORY INIT by pressing ▶ cursor key for more than 3 seconds.

(5) Check the following process for initialization operation.

BACK TO ADJUSTMENTS

·**Process of Memory Initialize operation.**

① A screen is be colored **cyan** when MEMORY INIT start.

② A screen is be colored **green** when MEMORY INIT finish normally.

③ A screen is be colored **red** when MEMORY INIT finish abnormally.

(6) Do not unplug from AC outlet until this operation is complete and do not perform any key operation either, after this operation each factory setting and all adjust mode data should reset to delivery settings automatically.

(7) After Memory Initialize, it should be unplug AC cord. Unplug and plug AC cord and then all settings and data are updated.

(8) When PDP turns ON , it will tune CH03 this is the complete operation of Memory Initialize process.

2.2 FACTORY AND SERVICE ADJUSTMENTS

The adjustment item that is affected by the memory initialize operation is shown below:

ITEM	MEMORY INITIALIZE	PROTECTION DATA	FACTORY RESET	MMC SOFTWARE UPGRADE	BECKHAM SOFTWARE UPGRADE
WHITE BALANCE ADJUSTMENT DATA	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
SUB CONTRAST ADJUSTMENT DATA	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
CLAMP OFFSET ADJUSTMENT DATA	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
OTHER ADJUSTMENT MODE DATA	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
FACTORY RESET	INITIALIZED	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	INITIALIZED

3 VIDEO ADJUSTMENT

Note: Perform pre heat-run for more than 20 min. before adjusting.

3.1 SUB-CONTRAST & CLAMP OFFSET ADJUSTMENT

Preparation for adjustment

(1) Pre-heat at least 2 min. before the Final Adjust.

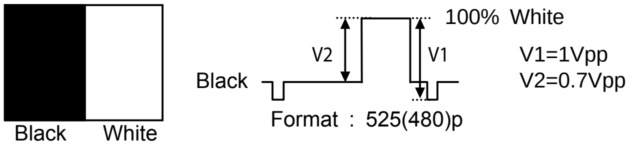
(2) Recall user menu and select 'Video'→ 'Picture Mode'→ 'Day(Dynamic)'→ 'Reset'.

(3) Receive following signal into input3 or input4(Comp) input.

Adjustment procedure

3.11 525p Sub-Contrast, Y/Cb/Cr Clamp offset adjustment

(1) Receive following 525(480)p Signal.



Adjustment signal for 525(480)p format

(2) Go into Service Adj. Menu and select 'RGB' .

(3) Press ▶ for over 2 seconds and have it perform automatic adjustment. When it's completed, 'Auto Adjusting' on the screen will be disappeared.

3.12 525i Cb,Cr Clamp offset adjustment

Preparation

(1) Change signal format from 525(480)p to 525(480)i. (See Fig.2)

Adjustment

(1) Select 'RGB' of Service Adj. Menu. Press ▶ for over 2 seconds and have it perform automatic adjustment. When it's completed, 'Auto Adjusting' on the screen will be disappeared.

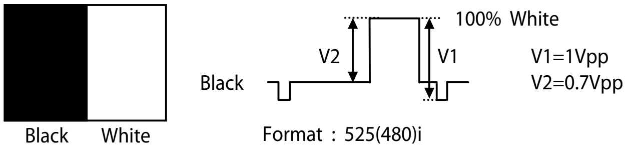
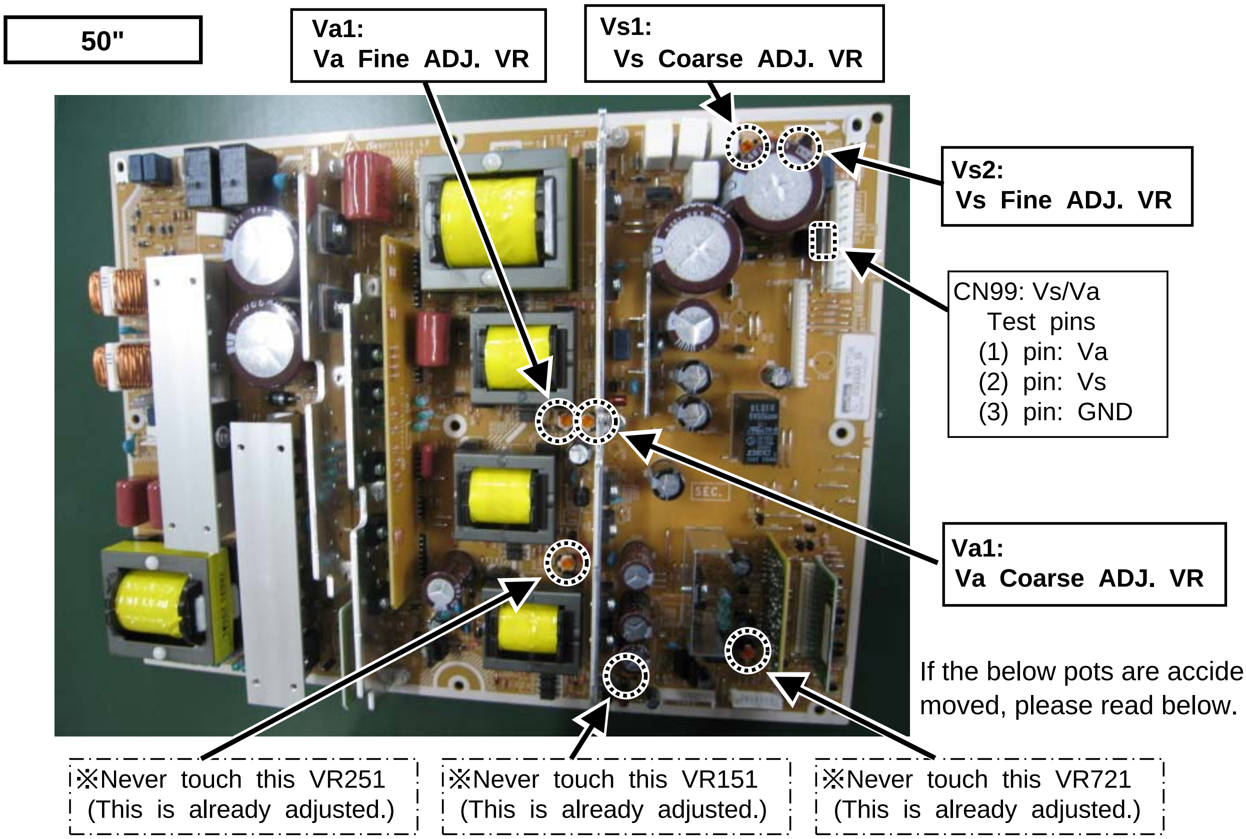


Fig.2 Adjustment signal for 525(480)i format

4 POWER SUPPLY Vs, Va voltage adjustment

Item	Power Unit Vs, Va Adjustment			Adj. point	Refer to following
Adjustment Preparations		Adjustment Procedures		Remarks	
(1)	Turn on the set and perform pre-heat run more than 1 min on burn-in screen. (Screen Wipe) See below (*)	(1)	Turn Vs ADJ to adjust Vs voltage to be within ±0.1V of the value specified in the label on the panel.	Permissive level of voltage in sufficient time of heat-run performed is: Vs: within ±0.1V	
(2)	Receive full black pattern signal (or video silence signal; but the power will be automatically turned off after a few seconds by power save function.)	(2)	Turn Va ADJ to adjust Va voltage to be within ±0.2V of the value specified in the label on the panel.	Va: within ±0.2V	
(3)	Connect voltmeter (which has an error within 0.02V or less) leads to Vs (or Va) and GND test points of the power unit. *** TO SET WIPE:** Go to Customer's Menu Enter "Setup" Enter "Set the Screen Saver" Highlight "Wipe" press "Enter"	(3)	Reconfirm that Vs voltage remains within ±0.1V of the specified value. Readjust if it's outside of the margin . [Label Example] <LOT>N6 Vs= 80.0V Va=60.0V Vw=140.0V Vx=60.0V	[Label Position (Reference)] Upper left If it's hard to read the voltage value because of the wiring positions, write it down by a marker at visible place in advance.	



If the below pots are accidentally moved, please read below.

※Never touch this VR251
(This is already adjusted.)

※Never touch this VR151
(This is already adjusted.)

※Never touch this VR721
(This is already adjusted.)

VR251 should be adjusted at the point when CNPPS connector Pin 7, 13,14 or 15 voltage is 10.6 V (± 0.5).
VR151 should be adjusted to the point when CNPPS connector Pin 1, 2 or 3 voltage is 5.4 V (+0.5/-0).
VR721 should be adjusted at the point when CN64 Pin 3 or CN68 pin 1 voltage is 5.1 V (± 0.255).

CH 6

BACK TO ADJUSTMENTS

5 WHITE BALANCE ADJUSTMENT

General Notes for White Balance

(1) If the incident illumination is more than 20 lux, change the environment (location, lighting, etc.) and ensure it to be less than 20 lux.
(2) At least one of the color drive codes must stay at its maximum value, FF_H.

5.1 VIDEO COLOR TEMPERATURE ADJUSTMENT (HIGH)

Preparation 1

(1) Set the output of signal generator to white raster. (Ratio:100%)
(2) Component signal (480i)

Video level:	0.700Vp-p
SYNC:	0.300Vp-p
Set-up level:	0V

(3) Input white raster signal into COMPONENT input terminal of the PDP set.
(4) Set user control to Day(Dynamic) mode. (Picture Mode)
(5) Confirm that the mode is set as "Factory Setting Mode".
(6) Aspect: 4:3 Expanded

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to "HIGH".
(4) Ensure that Adjustment R/G/B DRIVE (HIGH) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/G/B DRIVE (HIGH) and adjust the value shown in the following:

Specification
Video Color temperature (HIGH)

x = 0.266 ± 0.005
y = 0.270 ± 0.005
(Color temp: 14000K+0MPCD)

At least one of the data should be FF.

Remarks

(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.
(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.
(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there's no problem.

5.2 VIDEO COLOR TEMPERATURE ADJUSTMENT (MEDIUM)

Preparation

(1) Same as "Video Color Temperature adjustment: (HIGH)".

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to "MEDIUM".
(4) Ensure that Adjustment R/G/B DRIVE (MEDIUM) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (MEDIUM) and adjust the value shown below.

Specification
Video Color temperature (MED)

x = 0.285 ± 0.005
y = 0.293 ± 0.005
(Color temp: 9300K)

At least one of the data should be FF.

Remarks

(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.
(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.
(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there's no problem.

BACK TO ADJUSTMENTS

5.3 VIDEO COLOR TEMPERATURE ADJUSTMENT (STD)

Preparation

(1) Same as “Video Color Temperature adjustment: (HIGH)”.

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to “STD”.
(4) Ensure that Adjustment R/G/B DRIVE (STD) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (STD) and adjust the value shown below.

Specification
Video Color temperature (STD)

x = 0.314 ± 0.005
y = 0.323 ± 0.005
(Color temp: 6500K)

At least one of the data should be FF.

Remarks

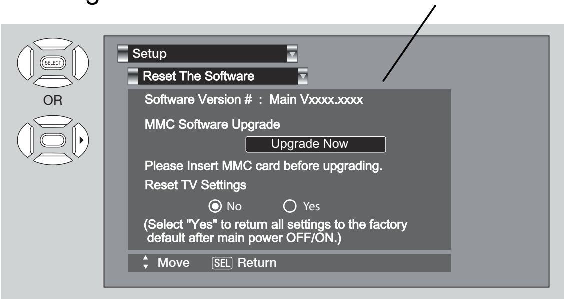
(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.
(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.
(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there’s no problem.

6 DIGITAL MAIN CHECK

6.1 SYSTEM SOFTWARE VERSION CHECK

(1) Press Menu button on the R/C or control panel.
(2) Enter the SETUP options, and then look for UPGRADES option.
(3) The Main software version will be display Vxxx.xxxx as shown on Fig. 1.
(4) If this version needs to be change for a design improvement or failure, please select the Upgrade Now button after inserting MMC/SD card.

Fig. 1



Software Version # : Main Vxxxx.xxxx

MMC Software Upgrade

Please Insert MMC card before upgrading.

Reset TV Settings

● No ○ Yes

(Select "Yes" to return all settings to the factory default after main power OFF/ON.)

(5) The upgrading process begin by filling a bar, when finish the message will say, “Upgrade complete …” when this appear unplug the TV from the AC line outlet to complete the process.
(6) Now plug again the TV and verify the new software version.
(7) The Main software version will display the latest version issue by design.

NOTE:

(1) In case that the upgrade fails or when a CARD is inserted with new version and can’t upgrade ; please perform the **FACTORY RESET** process to the TV, then try upgrading again.

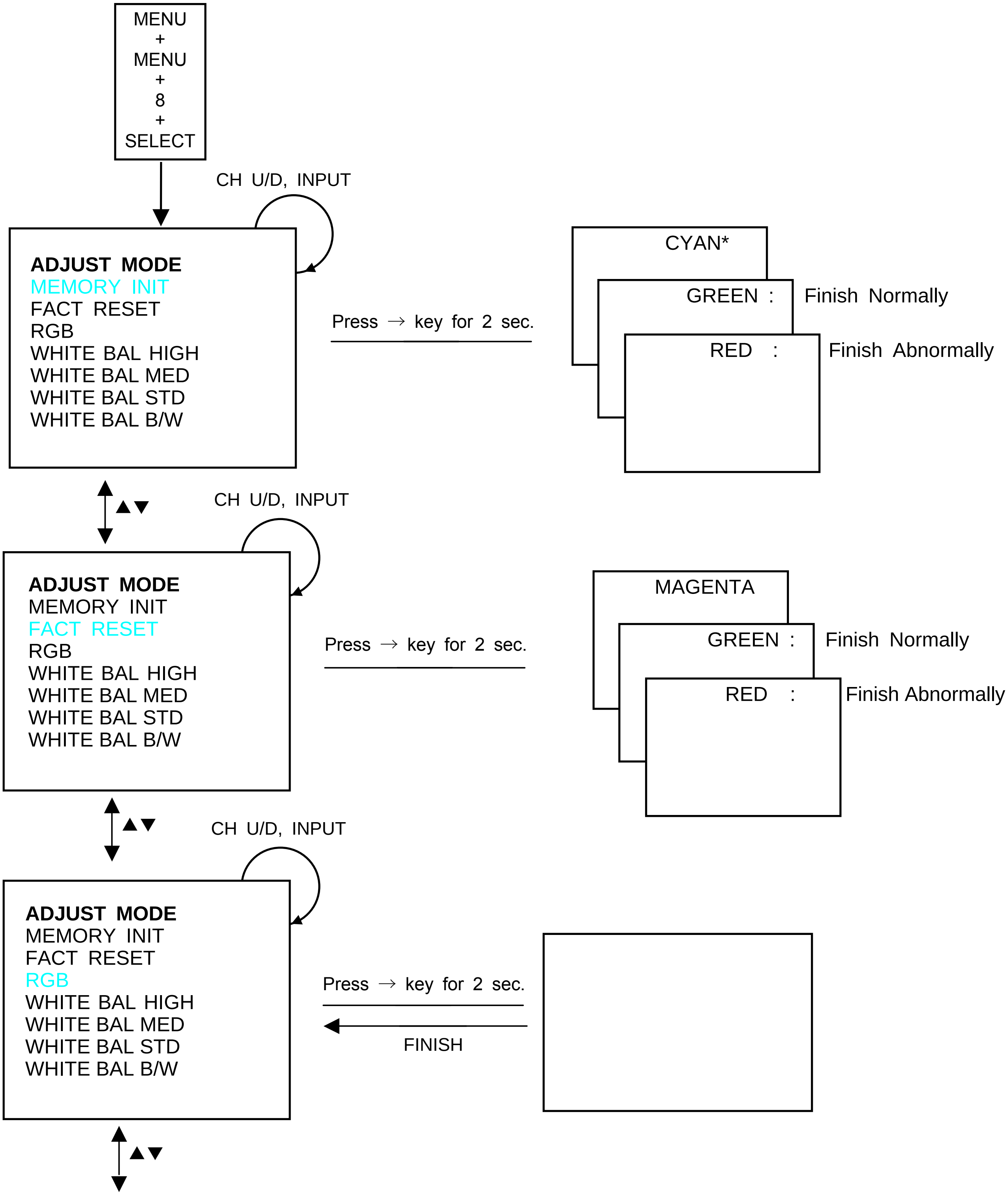
BACK TO ADJUSTMENTS

5.4 WHITE BALANCE ADJUSTMENT OSD FLOW DIAGRAM

5.4.1 Adjustment OSD Flowchart

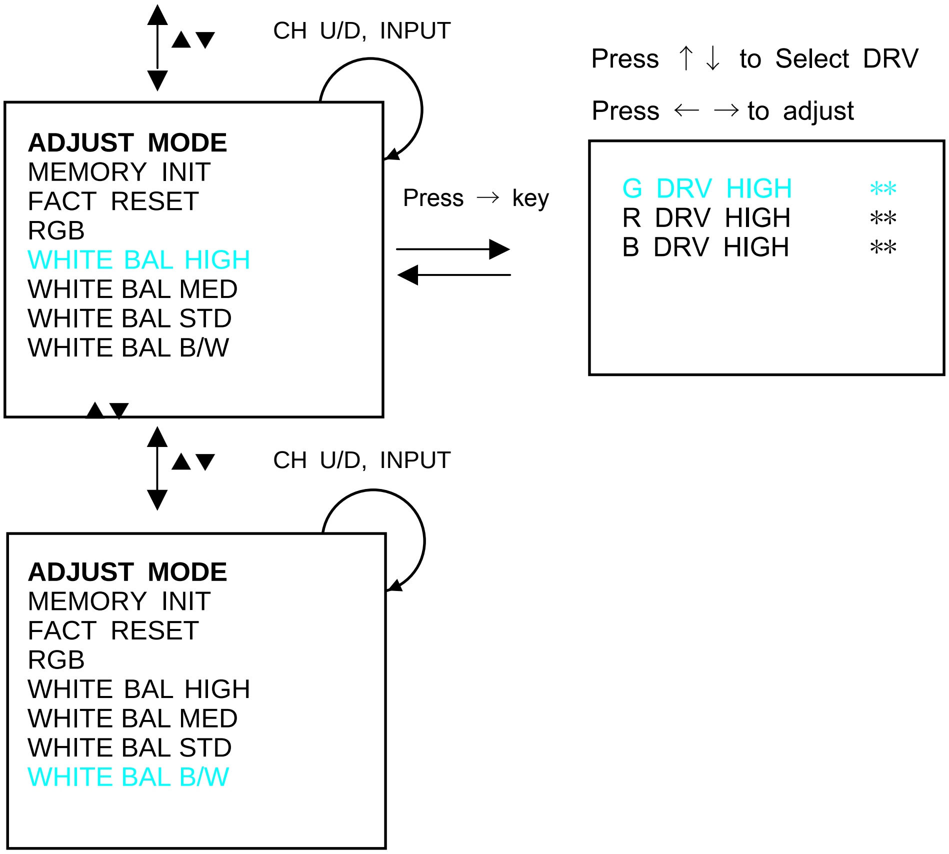
(1) Adjust Mode OSD

Press [MENU]+[MENU]+[8]+[SELECT] of Control panel.


MENU
+
MENU
+
8
+
SELECT
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key for 2 sec.
CYAN*
GREEN :
RED :
Finish Normally
Finish Abnormally
▲▼
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key for 2 sec.
MAGENTA
GREEN :
RED :
Finish Normally
Finish Abnormally
▲▼
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key for 2 sec.
FINISH
▲▼

BACK TO ADJUSTMENTS

5.4.1 Adjustment OSD Flowchart (continued)


▲▼
CH U/D, INPUT
Press ↑ ↓ to Select DRV
Press ← → to adjust
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key
G DRV HIGH **
R DRV HIGH **
B DRV HIGH **
▲▼
▲▼
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W

WHITE BALANCE
ADJUST MODE

VIDEO SETTINGS
(1) CONTRAST ; MAX
(2) COLOR,TINT,SHARP,BRIGHT ; CENTER
(3) COLOR TEMP ; HIGH

ADJUST
(1) Press ↑ ↓ to Select the G DRV,R DRV, B DRV.
(Initial value R/G/B DRV : FF)

(2) Press ← →to adjust

BACK TO ADJUSTMENTS

7 SCREEN CHECK

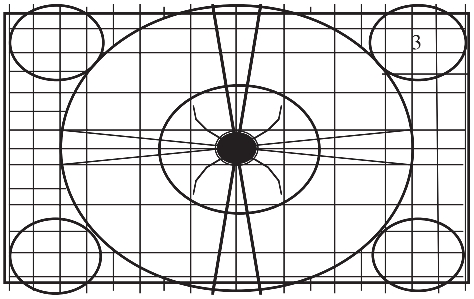
Preparation

(1) Set AC120±1V.
(2) Turn on the power and leave it more than 5 min.
(3) Receive circle pattern at 4:3 Expanded mode.
(4) Input 480p and 1080i circle pattern into Component video 3. (ASPECT 16:9 Standard)

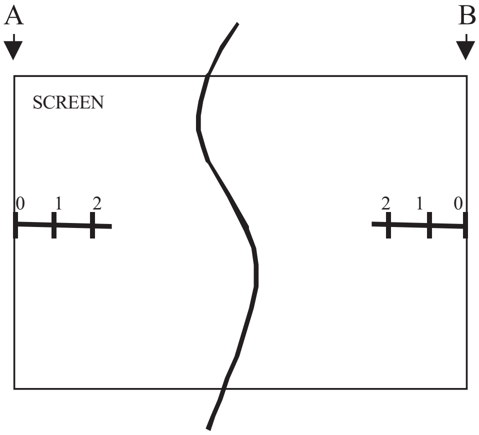
Checking

(1) Receive RF, 480p and 1080i signal, then check the following items 1~4:

1. Check the symmetry of the pattern (right/left).
2. Check the horizontal position and the balance (right/left).
3. Check the symmetry of the pattern (top/bottom).
4. Check the vertical position and the balance (top/bottom).



Remarks



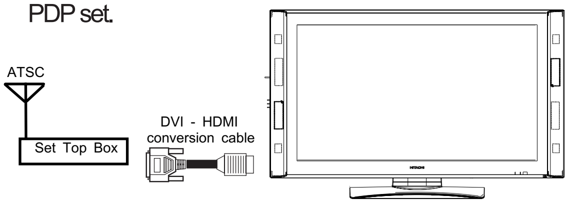
SIGNAL	ASPECT	SPEC(A,B)
Hitachi circle pattern	16:9 Standard1	0 +/- 0.5

8 HDMI ADJUSTMENT

(1) DVI compatibility check

Preparation

1. Prepare HDTV signal generator.
2. Select DVI mode then 1080i format
3. Connect HDMI-DVI cable to the HDMI input on the PDP set.



9 FACTORY RESET

After all of the adjustments of main chassis are finished, perform FACTORY RESET.

(1) Enter Adjustment Mode by the method described in sub-item 1-1 from page 43. ("Adjustment Procedure Start-up").
(2) From the first menu in Adjustment Mode, select FACT RESET adjustment code.
(3) Activate FACT RESET by pressing "Right" cursor key once.
(4) The procedure of the FACTORY RESET process is the following and the DATA table is shown next.

Process of FACTORY RESET operation.

① A screen is colored **magenta** when FACTORY RESET start.
② A screen is colored **green** when FACTORY RESET finish normally.
③ A screen is colored **RED** when FACTORY RESET finish abnormally.

(6) After FACTORY RESET, it should be unplug AC cord.Unplug and plug AC cord and then all settings and data are updated.

(7) When PDP turns ON , it will tune CH03 this is the complete operation of FACTORY RESET process.

BACK TO ADJUSTMENTS

10 DATA TABLE OF SETTING FOR DELIVERY

USER Control Initialization
Settings for delivery (FACTORY RESET)

Function	Initial Data	Condition	P50T501	P50H401 P50H4011
Input Mode	Air		X	X
Channel	03/03-1 ch		X	X
Favorite Channels	Not Registered		X	X
PIP On/Off	Off		X	—
PIP Mode	SPLIT		X	—
POP Position	Middle Right		—	—
PIP Position	Bottom Right		—	—
Freeze Mode	Main Freeze (1pix)		X	—
Photo Mode	Off		X	—
Rotate	No Rotate		X	—
Slideshow Interval	5 sec		X	—
Master Volume	20 Step		X	X
Video				
Picture Mode	Day(Dynamic)		X	X
Contrast (White Level)	100%		X	X
Brightness (Black Level)	50%		X	X
Color	58%		X	X
Tint	CENTER		X	X
Sharpness	50%		X	X
Motion Sharpness	High		—	—
Back Light	100%		—	—
Color Temperature	High		X	X
Black Enhancement	Off		X	X
Contrast Mode	Dynamic		X	X
Noise Reduction	Low		X	X
Cross Color NR	Off		—	—
MPEG-NR	Off		X	X
Auto Movie Mode	Off	ANT	X	X
	On	Input	X	X
	Smooth2	ANT	—	—
	Smooth1	Input	—	—
Color Space	Wide		—	—
Color Management				
Set User Colors	Off		—	—
Magenta	±0		—	—
Red	±0		—	—
Yellow	±0		—	—
Green	±0		—	—
Cyan	±0		—	—
Blue	±0		—	—
Color Decoding				
RGB	RGB		—	—
Red	50%		—	—
Green	50%		—	—
Color	62%		—	—
Tint	Center		—	—
Auto Color	Off		—	—

BACK TO ADJUSTMENTS

10 DATA TABLE OF SETTING FOR DELIVERY (continued)

Function	Initial Data	Condition	P50T501	P50H401 P50H4011
White Balance				
Red Drive	100%		—	—
Green Drive	100%		—	—
Blue Drive	100%		—	—
Red Cutoff	50%		—	—
Green Cutoff	50%		—	—
Blue Cutoff	50%		—	—
Aspect				
Auto Aspect	Off		X	X
Mode	4:3 Expanded	4:3	X	X
	16:9 Standard1	16:9	X	X
Vertical Position	0		X	X
Black Side Panel	Off		X	X
Reset Video Settings	—		X	X
Audio				
Treble	50%		X	X
Bass	50%		X	X
Balance	CENT		X	X
Surround	Off		X	X
Bass Boost	On		X	X
Audio Source	Stereo	Analog Broadcast	X	X
Internal Speakers	On		X	X
Auto Noise Cancel	Off	Analog Broadcast	X	X
Perfect Volume	Off		X	X
Loudness	Off		X	X
Language	1 [Unknown]	DTV	X	X
Digital Output	Dolby Digital	DTV	X	X
DRC	On	DTV	X	X
Channel Manager				
Signal Meter				
Channel	—		X	X
Strength	—		X	X
Peak	—		X	X
SNR	—		X	X
OOB Lock/Unlock	—		—	—
OOB SNR	—		—	—
OOB Frequency	—		—	—
Auto Channel Scan				
Source	Air		X	X
Reset	—		X	X
Start	—		X	X
Channel List				
FAV	Not Set		X	X
CH#	Air/Cable:2-13CH		X	X
Scan	On		X	X
Lock	Off		X	X
ID	—		X	X

BACK TO ADJUSTMENTS

10 DATA TABLE OF SETTING FOR DELIVERY (continued)

Function	Initial Data	Condition	P50T501	P50H401 P50H4011
Locks				
Change Access Code	–		X	X
Engage Lock				
Set Channel Lock	All Unlock		X	X
Set Front Panel Lock	Unlock		X	X
Movie Ratings	All Unlock		X	X
TV Ratings	All Unlock		X	X
Canadian Ratings (Eng.)	All Unlock		X	X
Canadian Ratings (Frn.)	All Unlock		X	X
Region 5	–		X	X
Timers				
Set the Clock				
Time Zone	PST		X	X
Date	Jan 01 200 7		X	X
Time	--:-- AM (Not set)		X	X
Automatically Adjust Clock for Daylight Savings Changes.	off		X	X
Set Sleep Timer	0:00 (off)		X	X
Set Day/Night Timer				
Day (Normal) Mode On	Off/AM 6:00		X	X
Day (Dynamic) Mode On	Off/PM12:00		X	X
Night Mode On	Off/PM 6:00		X	X
Set Event Timer			X	X
Event1(2/3/4)	Not set		X	X
Start Time	--:-- AM (Not set)		X	X
End Time	--:-- AM (Not set)		X	X
Repeat	Jan 01 2006 (Once)		X	X
CH#	–		X	X

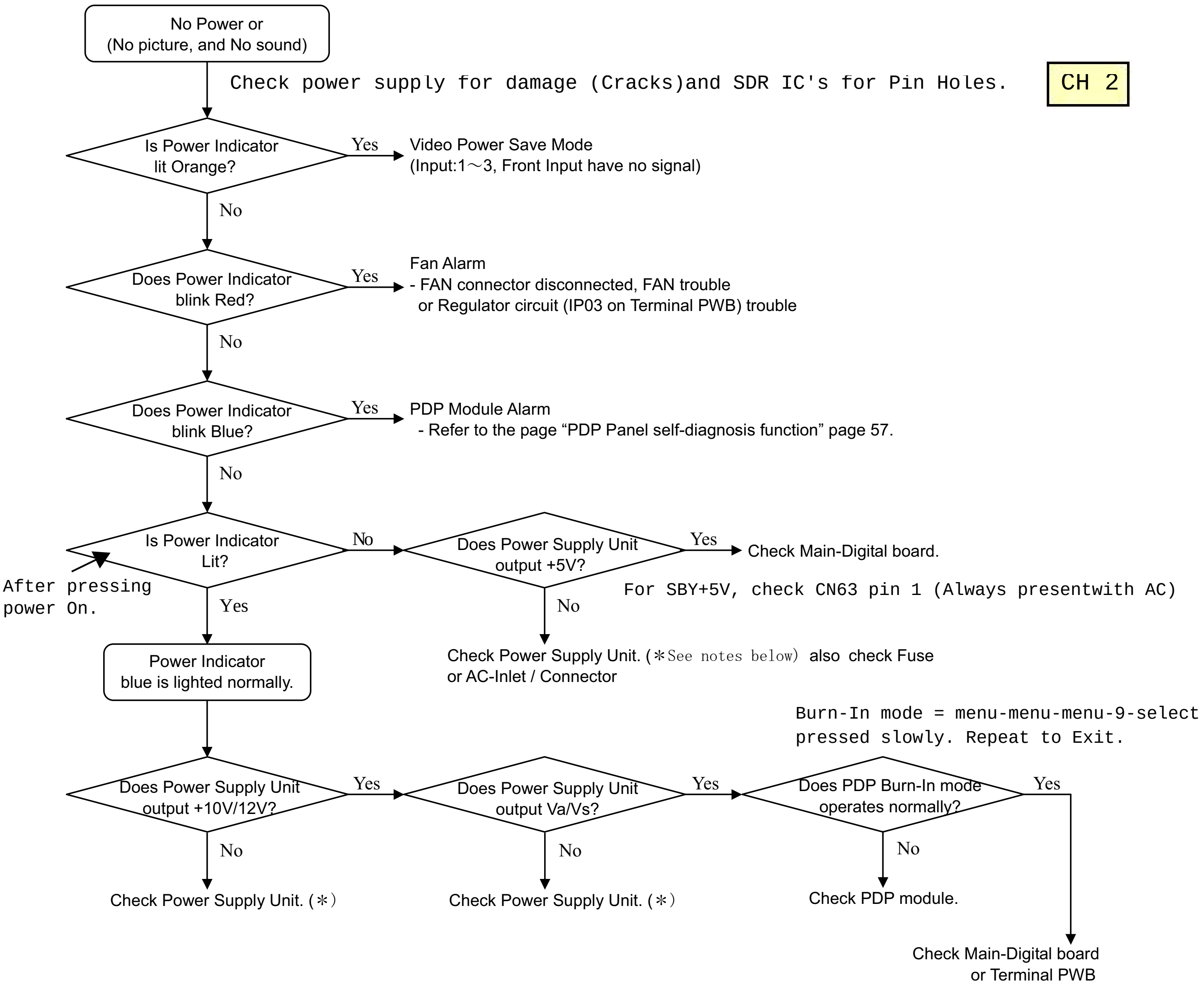
BACK TO ADJUSTMENTS

10 DATA TABLE OF SETTING FOR DELIVERY (continued)

Function	Initial Data	Condition	P50T501	P50H401 P50H4011
Setup				
Menu Preference				
Set The Language	English		X	X
Set The Menu Background	Shaded		X	X
Set The Screen Saver			X	X
Main Picture Moving	Option 1		X	X
Image Power	Max		X	X
Screen Wipe	–		X	X
Automatic Power Saving	Yes		X	X
Set The Power Saving			—	—
Image Power	Max		—	—
Automatic Power Saving	Yes		—	—
Set The Inputs				
Input1 Rename	None		X	X
Input2 Rename	None		X	X
Input3 Rename	None		X	X
Input3 Auto Link (Auto/Off)	Off		X	X
Input Front Rename	None		X	X
HDMI1 Rename	None		X	X
HDMI2 Rename	None		X	X
HDMI Front Rename	None		X	X
Set the AV Net	(Wizard will be starting.)		—	—
Set Closed Caption				
Caption Display	Auto		X	X
Analog				
Mode	Captions		X	X
Channel	Channel1		X	X
Digital				
Language	1 [Unknown]		X	X
Font	Default		X	X
Size	Standard		X	X
Style	Standard		X	X
Set The IR OUT				
IR Out	Normal Length		—	—
Set The Quick Start Options	off		X	X
Reset The Software				
MMC Software Upgrade	–		X	X
Reset TV Settings	No		X	X
Power Swivel	Locked		—	—

DW3 TROUBLESHOOTING FLOW CHARTS

[Power Supply troubleshooting]


No Power or
(No picture, and No sound)
Check power supply for damage (Cracks)and SDR IC's for Pin Holes.
CH 2
Is Power Indicator lit Orange?
Yes
Video Power Save Mode
(Input:1～3, Front Input have no signal)
No
Does Power Indicator blink Red?
Yes
Fan Alarm
- FAN connector disconnected, FAN trouble
or Regulator circuit (IP03 on Terminal PWB) trouble
No
Does Power Indicator blink Blue?
Yes
PDP Module Alarm
- Refer to the page "PDP Panel self-diagnosis function" page 57.
No
Is Power Indicator Lit?
After pressing power On.
No
Does Power Supply Unit output +5V?
Yes
Check Main-Digital board.
For SBY+5V, check CN63 pin 1 (Always presentwith AC)
No
Check Power Supply Unit. (＊See notes below) also check Fuse or AC-Inlet / Connector
Yes
Power Indicator blue is lighted normally.
Burn-In mode = menu-menu-menu-9-select pressed slowly. Repeat to Exit.
Does Power Supply Unit output +10V/12V?
Yes
No
Check Power Supply Unit. (＊)
Does Power Supply Unit output Va/Vs?
Yes
No
Check Power Supply Unit. (＊)
Does PDP Burn-In mode operates normally?
Yes
No
Check PDP module.
Check Main-Digital board or Terminal PWB

＊) Power-On control signals for Power Supply Unit (PSU here after)

(1) AC (Master Power) switch : ON → PSU outputs STBY+5V CN63 pin 1 and STBY +3.3V CN63 pin 3.

(2) PoWER_1 (+3.3V CN63 pin 6) : High → PSU outputs +5.6V.

(3) PoWER_2 (+3.3V CN63 pin 7) : High → PSU outputs +10V and +12V.

(4) Vcego (+2.69V CN68 pin 7) : High → PSU outputs Vcc+5.1V for PDP Panel.

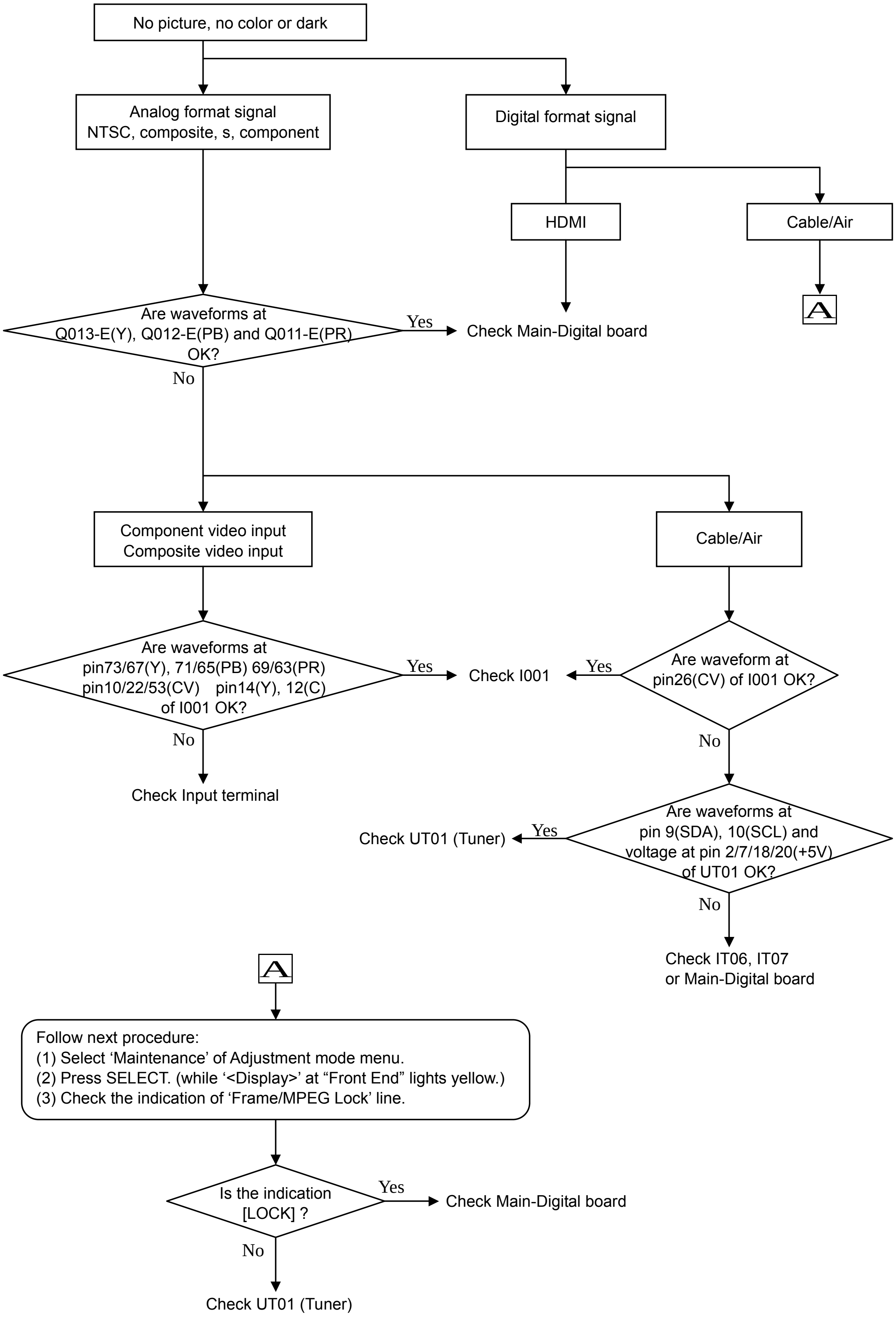
(5) Vsago (+2.69V CN68 pin 8) : High → PSU outputs Va and Vs for PDP Panel.

Note: Power_1 and Power _2 are high for the about 2 minutes when AC is first applied or always high if "Stand-By Mode" is turned on in Customer's Menu.

If any control signal does not rise, Power Supply can not output the voltage.
・PoWER_1 or _2 : does not rise ----- Suspect Main-Digital PWB trouble or connection.
・Vcego/Vsago : does not rise ----- PDP Panel Module (Suspect Logic PWB) trouble or connection.
However, Vcego should rise when PNLRST (Connector EC01 pin 43 at Main-Digital board) outputs a High and Vsago should rise when PNLoN (Connector EC01 pin 42 at Main-Digital board) also outputs a High. (See page 61 diagram)

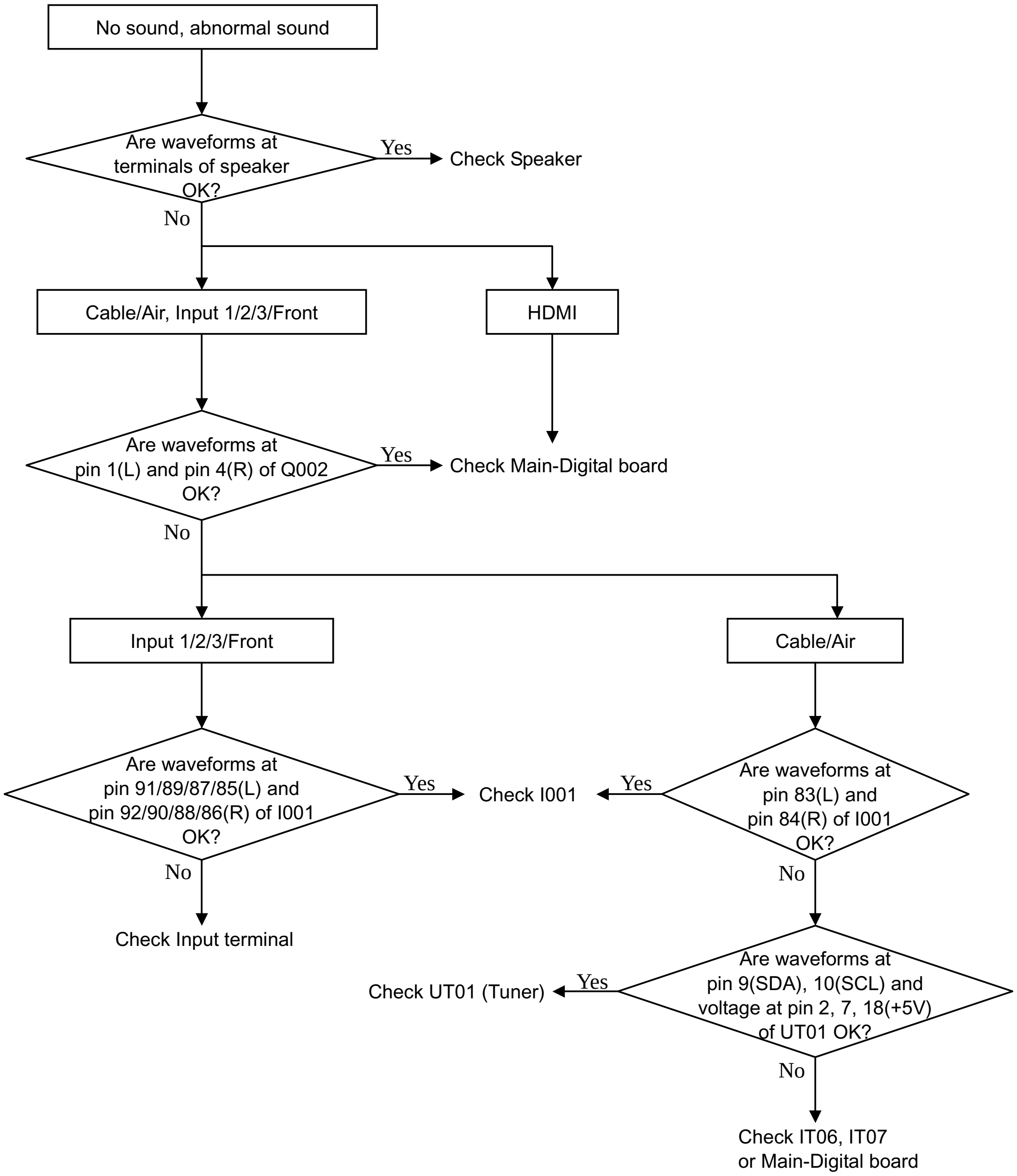
TROUBLESHOOTING FLOW CHARTS

[Terminal PWB circuit trouble shooting] (For in depth Troubleshooting Flowchart see page 115)


No picture, no color or dark
Analog format signal
NTSC, composite, s, component
Digital format signal
HDMI
Cable/Air
A
Are waveforms at
Q013-E(Y), Q012-E(PB) and Q011-E(PR)
OK?
Yes
Check Main-Digital board
No
Component video input
Composite video input
Cable/Air
Are waveforms at
pin73/67(Y), 71/65(PB) 69/63(PR)
pin10/22/53(CV) pin14(Y), 12(C)
of I001 OK?
Yes
Check I001
Yes
Are waveform at
pin26(CV) of I001 OK?
No
Check Input terminal
No
Are waveforms at
pin 9(SDA), 10(SCL) and
voltage at pin 2/7/18/20(+5V)
of UT01 OK?
Yes
Check UT01 (Tuner)
No
Check IT06, IT07
or Main-Digital board
A
Follow next procedure:
(1) Select 'Maintenance' of Adjustment mode menu.
(2) Press SELECT. (while '<Display>' at "Front End" lights yellow.)
(3) Check the indication of 'Frame/MPEG Lock' line.
Is the indication
[LOCK] ?
Yes
Check Main-Digital board
No
Check UT01 (Tuner)

TROUBLESHOOTING FLOW CHARTS

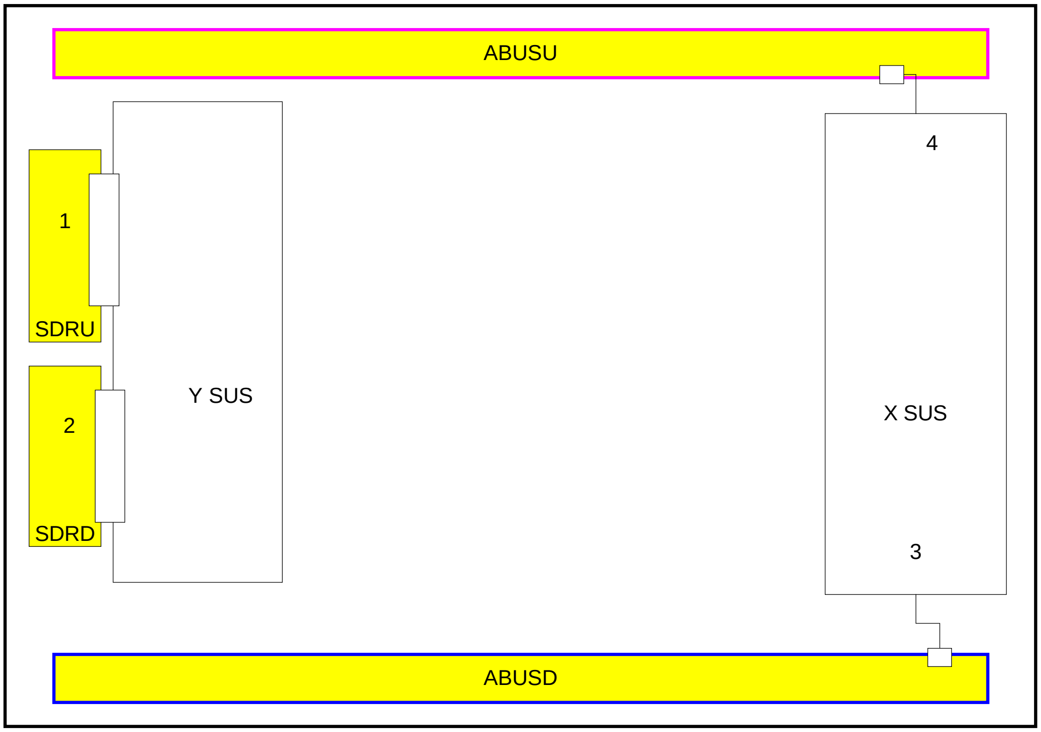
[Terminal PWB circuit trouble shooting] (For in depth Troubleshooting Flowchart see page 120)


No sound, abnormal sound
Are waveforms at terminals of speaker OK?
Yes
Check Speaker
No
Cable/Air, Input 1/2/3/Front
HDMI
Are waveforms at pin 1(L) and pin 4(R) of Q002 OK?
Yes
Check Main-Digital board
No
Input 1/2/3/Front
Cable/Air
Are waveforms at pin 91/89/87/85(L) and pin 92/90/88/86(R) of I001 OK?
Yes
Check I001
Yes
Are waveforms at pin 83(L) and pin 84(R) of I001 OK?
No
Check Input terminal
No
Are waveforms at pin 9(SDA), 10(SCL) and voltage at pin 2, 7, 18(+5V) of UT01 OK?
Yes
Check UT01 (Tuner)
No
Check IT06, IT07 or Main-Digital board

SYMPTOM	POSSIBLE CAUSE	Probable Board
NO POWER, NO LED LIT	Check that unit is plugged into live outlet and that main power switch of unit is turned on. Check fuse on Filter pwb. Replace power supply.	POWER SUPPLY
Blue led blinking always	Turn units master power switch off and back on (ac reset). If ac reset does not solve the problem then replace the main digital pwb.	MAIN DIGITAL
Power led Red. Panel power or RC power does not turn unit on to .(Blue LED)	Suspect main digital pwb.	MAIN DIGITAL
Blue LED on, No picture.	Power supply is working. See troubleshooting of X &YSUS pwbs, SDR and Abus pwbs. LINK	
No Audio	Check 10volt supply to main digital pwb.Connector PPM3 pins 3,4 or 5. If 10volt missing disconnect PPM3 and check CNPPS pins 13,14 or 15. If voltage missing suspect power supply. If voltage present suspect Main Digital PWB.	POWER SUPPLY OR MAIN DIGITAL
Video Problem	If problem is with tuner, Check monitor out. If video missing suspect Sub Digital. If problem is with Composite or componet suspect sub digital pwb If problem is with HDMI suspect Main Digital	SUB DIGITAL SUB DIGITAL MAIN DIGITAL
Top Half of Picture Missing	Check connector from SDR-U to Panel , remove and reinsert. If problem is same change SDR-U PWB	SDR-U
Bottom Half of Picture Missing	Check connector from SDR-D to Panel , remove and reinsert. If problem is same change SDR-D PWB	SDR-D
1 Horz Pixel Line Across the screen, Horz Bar or multi horz	Check the SDR pwb connector associated with where the line is. Remove and Re insert	IF CONNECTOR NOT THE PROBLEM THEN PANEL
HDMI Problems	Check Signal Source for Proper HDMI output. Check other HDMI inputs. Possible cause main Digital Pwb.	MAIN DIGITAL PWB
Tuner problems	If problem is with tuner only. Suspect Sub Digital PWB	SUB DIGITAL PWB
Composite, Componet problems	If problem with Composite or Componet only suspect Sub Digital PWB	SUB DIGITAL PWB

We have a procedure to isolate panel PWB's, which is a separate sequence of tests.

If Power Supply is protecting itself, easy to tell when we measure Va and Vs and it will come up and then will go down. These voltages go together with the Vsego and Vsago from the Logic PWB assy. These voltages will too come up and go down as well, these are the voltages turning the Vs and Va on.



On this lay out, have technicians start eliminating the SDR PWBs first. Remove the lower SDRd from Y SUS and try turning TV on. If this SDR is causing the problem (protection), TV will come on and will give you a good picture on the upper half and VA, VS will stay up. Do the same procedure for the upper SDRu, if the upper SDR is the problem then you will have a picture on the lower half and VA, VS will stay up. If neither of the SDR's correct the protection problem, remove connector 3 to lower ABUS pwb's and check VS, VA voltage, if still protected remove connector 4 to upper ABUS pwb's and check VS, VA voltage. (Some models do not have upper ABUS pwb's) Remember to remove and reinsert connectors CN63 & CN64 on PS pwb after each test, This will reset the protection circuit.

MAINTENANCE MODE ITEM'S DESCRIPTION TABLE.

In the Adjustment mode menu there is the Maintenance Mode sub-Menu of the Digital Module. It is useful for system diagnostics. The next table gives a brief explanation of its items.

Group	No	Item	Indicate format or choices	Contents
Front End	1	FEC	[LOCK] [UNLOCK]	Status of Forward Error Correction
	2	Modulation Type	[8VSB], [64QAM] [256QAM]	Modulation type
	3	IF Error	+/-[xxxxx]Hz	IF Frequency offset is updated every second
	4	Signal Strength	[0-100]	Signal level is scaled from 0 to 100. It is updated every second.
	5	Tuned CH	DTV: [xx] ch CATV-STD: [xx] ch CATV-HRC: [xx] ch CATV-IRC: [xx] ch	Tuned physical channel.
	6	Symbol Rate	[xxxxxxx] sym/sec	Symbol rate is updated every second
	7	SNR	[xx.xx] dB	Signal to noise ratio is updated every second.
	8	BER Before Correct	[x.xx e-xx]	Bit error rate before Reed-Solomon error correction is updated every second
	9	BER After Correct	[x.xx e-xx]	Bit error rate after Reed-Solomon error correction is updated every second
TS check	1	Video PID (HEX)	[xxxx]	Video PID in TS (Transport Stream)
	2	Audio PID (HEX)	[xxxx]	Audio PID in TS
	3	PCR PID (HEX)	[xxxx]	PCR PID in TS
Video Format	1	Video Format	[1080I] [720P] [480P] [480I] [240P]	Video format of selected program
	2	Frame Rate	[23.97] [24] [29.97] [30] [59.94] [60]	Frame rate of selected program
	3	Aspect Ratio	[16:9] [4:3]	Picture aspect ratio of selected program
	4	Pan Scan	H: [Yes] [No] V: [Yes] [No]	Existence of Horizontal/vertical Pan & Scan setting
	5	3: 2 Pull-down	[ON] [OFF]	Status of 3:2 pull-down function
	6	Resolution	H: [1920] [1280] [704] [640] V: [1080] [720] [480]	Horizontal and vertical picture resolution in decimal
	7	Bit Rate / VBV Bf	[xx.xxx] Mbps [xxxxxx] KB	Video encode bit rate / VBV buffer rate
	8	Copy Guard (D)	[Free] [1 time] [Never] [Stop]	Copy guard status of digital output ([stop] is not available for Digital output)
	9	Copy Guard (A)	CGMS-A: [20bit; HEX 5 digit] Macrovision: [Yes] [No]	Copy guard status of Analog output
Audio Format	1	Sampling Frequency	[48 KHz] [44.1KHz] [32KHz]	Status of audio sampling frequency
	2	Channel Mode	[MONO] [STEREO] [DUAL] / MULTI-ST [2/1] [3/0] [2/2] [3/1] [3/2] [3/2+LFE]	Status of audio channel mode
	3	Timing Adjustment	[-2] [-1] [0] [+1] [+2]	For AV synchronization, the timing of the down mixing audio output is adjustable with 5 values.
	4	Audio Decode	[AC3] [MPEG Audio]	Status of audio decoding
Video Output	1	Video Output Setup	[Normal]	Status of NTSC video output for VCR recording. Display only [Normal] as fixed value because the video output only supports [Normal].
	2	NTSC Output Quality	[Weak] [Normal] [Strong]	Selection of vertical filter adapted to NTSC video output
	3	Brightness	Adjust: [-100 ~ +100%]	Adjustment of brightness control for UD OSD
	4	Contrast	Adjust: [-100 ~ +100%]	Adjustment of contrast control for UD OSD
System	1	Rcv Interrupt Rec.	[List Indication]	Received Interrupt Record. See Note 1
	2	Software Version	Main: [xxxxxxxx] 1394: [xxxxxx]	Software version of module control (Main) and IEEE1394 control (1394)
	3	MMC Download	[List Indication]	Download a software from MMC stored file list (See Note 2)
	4	Factory Settings	-----	Administration of the factory settings, and initialization of user and EPG cache.
	5	Serial No. Confirm	Manufacturer ID: [xx] Model ID: [xx] Serial No.: [xxxxxx] Check Sum: [xxxx]	Display of set of serial number data: manufacturer ID, model ID, serial No. and check sum.
	6	MMC/Sniffer Switch	[MMC] [Sniffer]	Selection of MMC socket mode between MMC and Sniffer. Restored to MMC by initialization of “Factory Settings”

CIRCUIT BLOCK DIAGRAM

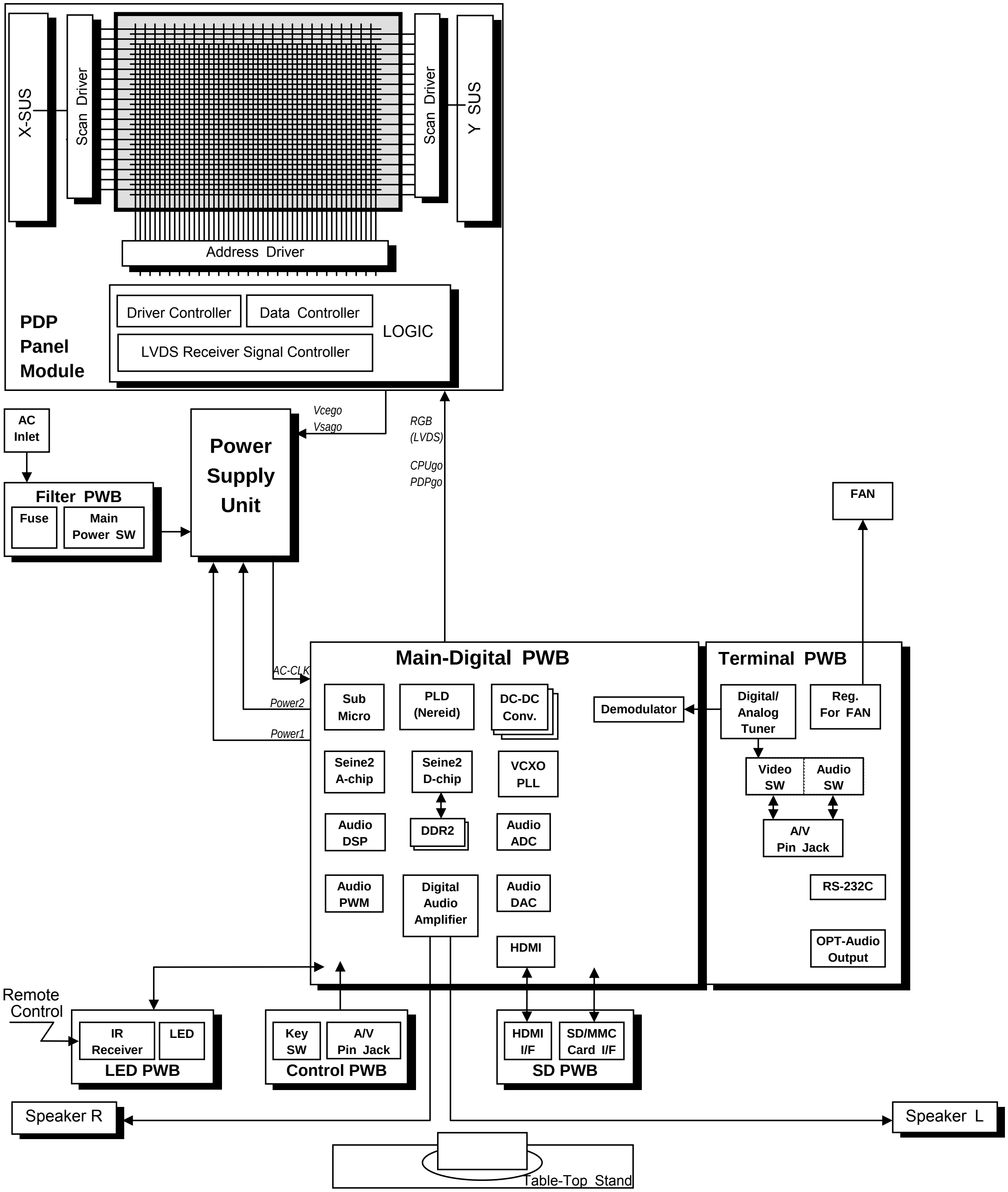
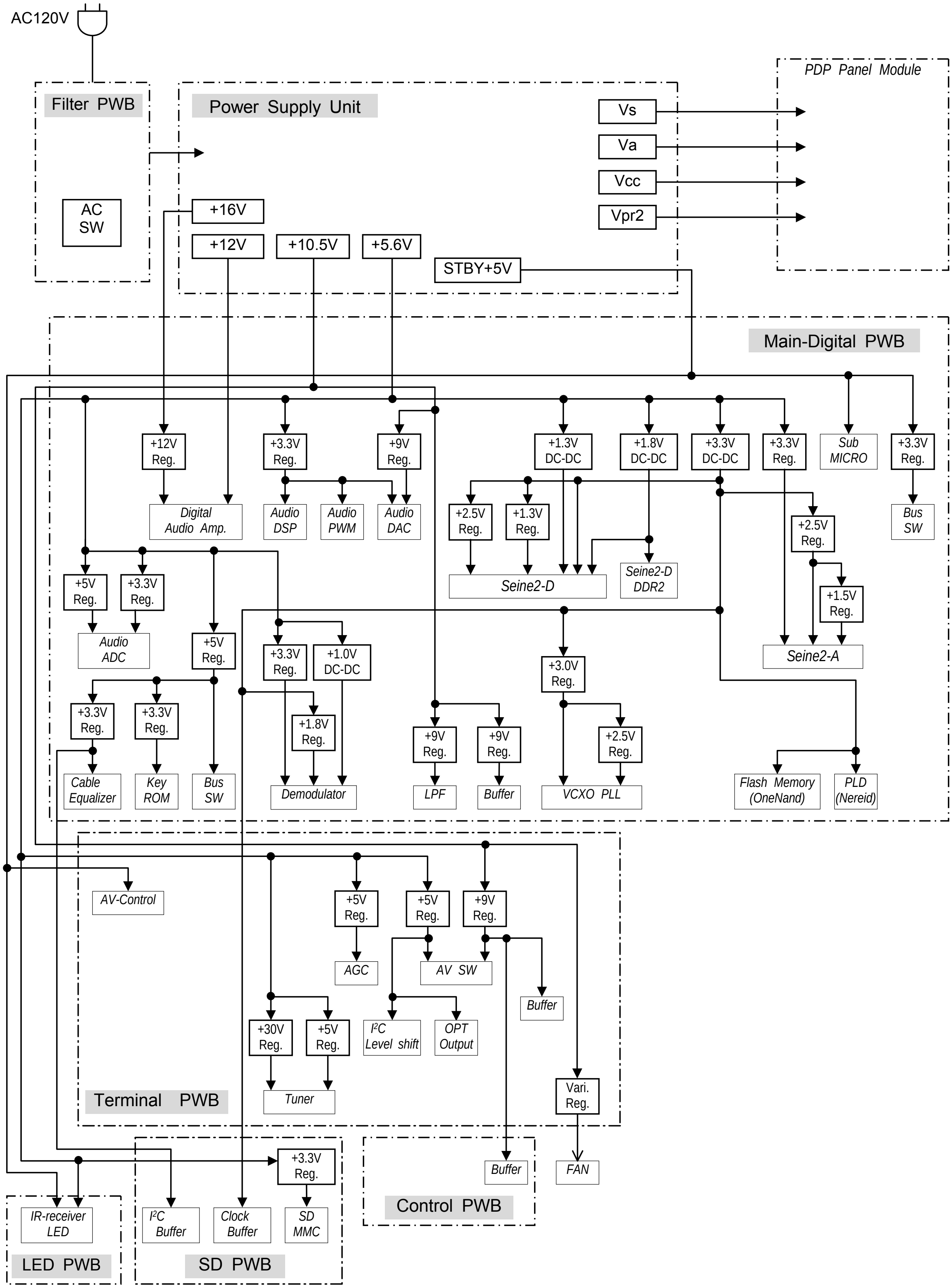
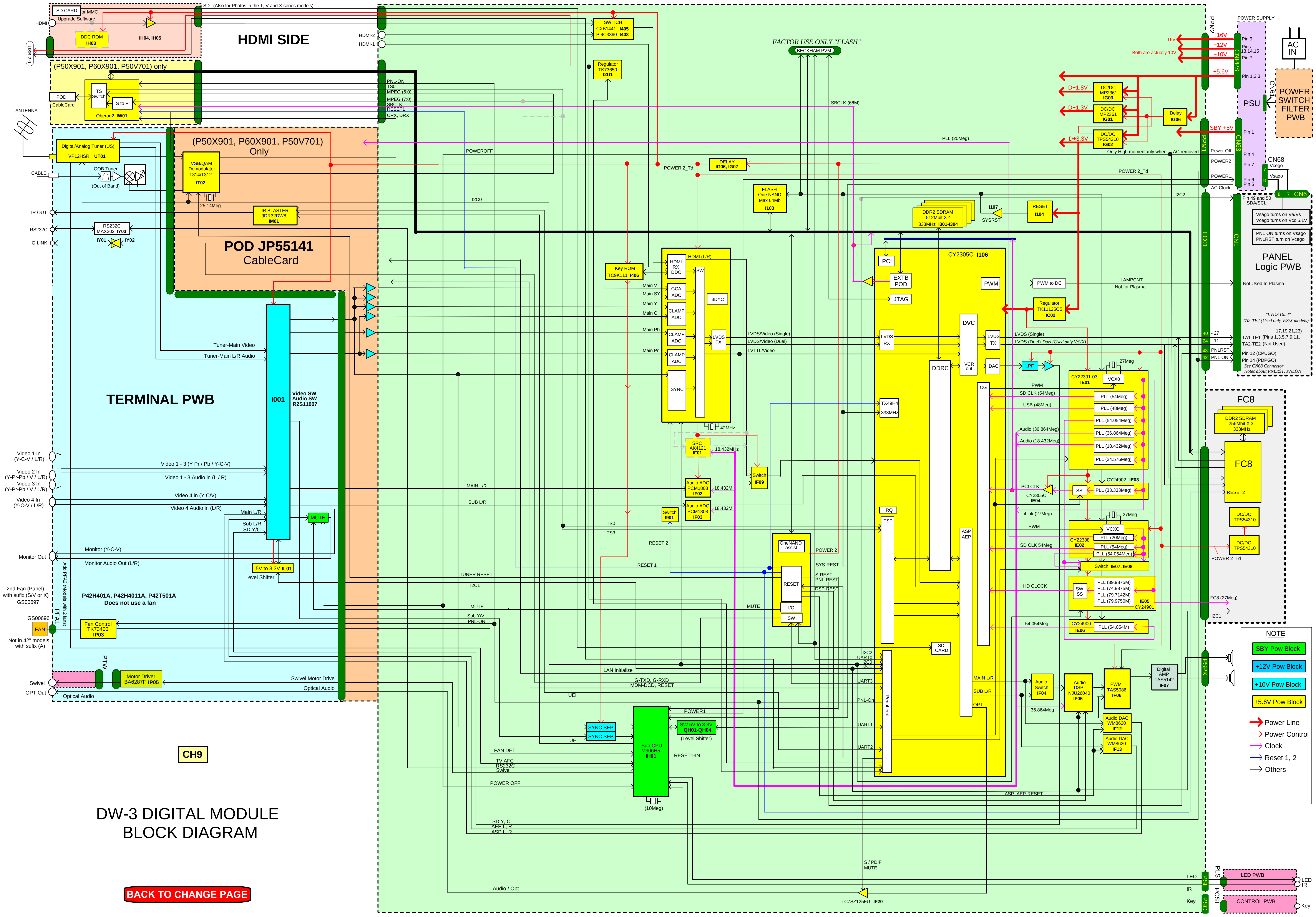

X-SUS
Scan Driver
Scan Driver
Y SUS
Address Driver
PDP
Panel
Module
Driver Controller
Data Controller
LOGIC
LVDS Receiver Signal Controller
AC
Inlet
Filter PWB
Fuse
Main
Power SW
Power
Supply
Unit
Vcego
Vsago
RGB
(LVDS)
CPUgo
PDPgo
FAN
Main-Digital PWB
AC-CLK
Power2
Power1
Sub
Micro
PLD
(Nereid)
DC-DC
Conv.
Demodulator
Seine2
A-chip
Seine2
D-chip
VCXO
PLL
Audio
DSP
DDR2
Audio
ADC
Audio
PWM
Digital
Audio
Amplifier
Audio
DAC
HDMI
Terminal PWB
Digital/
Analog
Tuner
Reg.
For FAN
Video
SW
Audio
SW
A/V
Pin Jack
RS-232C
OPT-Audio
Output
Remote
Control
IR
Receiver
LED
LED PWB
Key
SW
A/V
Pin Jack
Control PWB
HDMI
I/F
SD/MMC
Card I/F
SD PWB
Speaker R
Speaker L
Table-Top Stand

TABLE OF CONTENTS

POWER SYSTEM BLOCK DIAGRAM


AC120V
Filter PWB
AC SW
Power Supply Unit
Vs
Va
Vcc
Vpr2
+16V
+12V
+10.5V
+5.6V
STBY+5V
PDP Panel Module
Main-Digital PWB
+12V Reg.
+3.3V Reg.
+9V Reg.
+1.3V DC-DC
+1.8V DC-DC
+3.3V DC-DC
+3.3V Reg.
Sub MICRO
+3.3V Reg.
Digital Audio Amp.
Audio DSP
Audio PWM
Audio DAC
+2.5V Reg.
+1.3V Reg.
Seine2-D
Seine2-D DDR2
+2.5V Reg.
+1.5V Reg.
Seine2-A
Bus SW
+5V Reg.
+3.3V Reg.
Audio ADC
+5V Reg.
+3.3V Reg.
+1.0V DC-DC
+3.0V Reg.
+3.3V Reg.
+3.3V Reg.
+1.8V Reg.
+9V Reg.
+9V Reg.
+2.5V Reg.
Cable Equalizer
Key ROM
Bus SW
Demodulator
LPF
Buffer
VCXO PLL
Flash Memory (OneNand)
PLD (Nereid)
AV-Control
+5V Reg.
+5V Reg.
+9V Reg.
AGC
AV SW
Buffer
+30V Reg.
+5V Reg.
I²C Level shift
OPT Output
Tuner
Terminal PWB
Vari. Reg.
FAN
+3.3V Reg.
Buffer
Control PWB
IR-receiver LED
LED PWB
I²C Buffer
Clock Buffer
SD MMC
SD PWB

DW-3 DIGITAL MODULE
BLOCK DIAGRAM

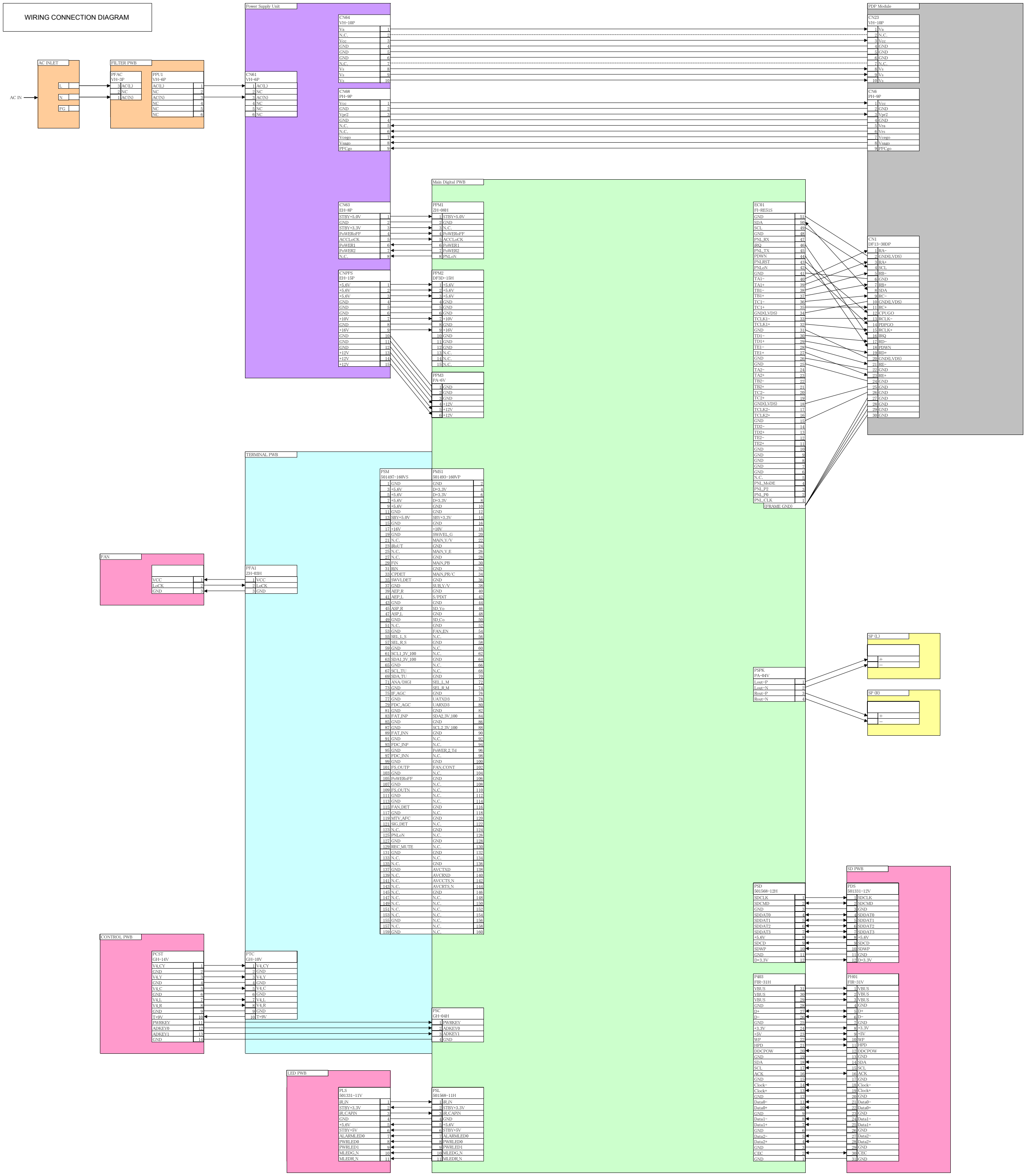


HDMI SIDE
SD CARD
or MMC
Upgrade Software
DDC ROM
IH03
IH04, IH05
SD (Also for Photos in the T, V and X series models)
HDMI
USB 2.0
HDMI-2
HDMI-1
SWITCH
CXB1441 I405
PI4C3390 I403
Regulator
TK73650
I2U1
(P50X901, P60X901, P50V701) only
POD
CableCard
TS Switch
S to P
Oberon2 IW01
ANTENNA
PNL-ON
TS0
MPEG (6:0)
MPEG (7:0)
SBCLK
RESET1
CRX, DRX
FACTOR USE ONLY "FLASH"
BECKHAM PVM
SBCLK (66M)
PLL (20Meg)
Digital/Analog Tuner (US)
VP12HSR UT01
OOB Tuner
(Out of Band)
CABLE
(P50X901, P60X901, P50V701)
Only
VSB/QAM
Demodulator
T314/T312
IT02
25.14Meg
POWEROFF
POWER 2_Td
DELAY
IG06, IG07
IR OUT
RS232C
RS232C
MAX202 IY03
IY01
IY02
G-LINK
IR BLASTER
9DR32DW8
IM01
I2C0
POD JP55141
CableCard
FLASH
One NAND
Max 64Mb
I103
DDR2 SDRAM
512Mbit X 4
333MHz I301-I304
I107
SYSRST
RESET
I104
Key ROM
TC9K111 I406
HDMI (L/R)
HDMI RX DDC
SW
GCA ADC
CLAMP ADC
3DYC
LVDS TX
SYNC
Main V
Main SY
Main Y
Main C
Main Pb
Main Pr
LVDS/Video (Single)
LVDS/Video (Duel)
LVTTL/Video
PCI
EXTB POD
JTAG
CY2305C I106
PWM
PWM to DC
LAMPCNT
Not for Plasma
Regulator
TK11125CS
IC02
DVC
LVDS RX
LVDS TX
LVDS (Single)
LVDS (Duel) Duel (Used only V/S/X)
DDRC
VCR out
DAC
LPF
27Meg
CG
Tuner-Main Video
Tuner-Main L/R Audio
TERMINAL PWB
I001
Video SW
Audio SW
R2S11007
42MHz
SRC
AK4121
IF01
18.432MHz
Switch
IF09
Audio ADC
PCM1808
IF02
Audio ADC
PCM1808
IF03
18.432M
18.432M
Switch
I901
TX49H4
333MHz
IRQ
TSP
ASP AEP
CY22391-03
IE01
VCXO
PWM
SD CLK (54Meg)
USB (48Meg)
Audio (36.864Meg)
Audio (18.432Meg)
PLL (54Meg)
PLL (48Meg)
PLL (54.054Meg)
PLL (36.864Meg)
PLL (18.432Meg)
PLL (24.576Meg)
PCI CLK
CY2305C
IE04
SS
PLL (33.333Meg)
CY24902 IE03
iLink (27Meg)
PWM
SD CLK 54Meg
CY22388
IE02
PLL (20Meg)
PLL (54Meg)
PLL (54.054Meg)
Switch IE07, IE08
HD CLOCK
SW SS
PLL (39.9875M)
PLL (74.9875M)
PLL (79.7142M)
PLL (79.9750M)
IE05
CY24901
54.054Meg
CY24900
IE06
PLL (54.054M)
Video 1 In
(Y-C-V / L/R)
Video 2 In
(Y-Pr-Pb / V / L/R)
Video 3 In
(Y-Pr-Pb / V / L/R)
Video 4 In
(Y-C-V / L/R)
Video 1 - 3 (Y Pr / Pb / Y-C-V)
Video 1 - 3 Audio in (L / R)
Video 4 in (Y C/V)
Video 4 Audio in (L/R)
Main L/R
Sub L/R
SD Y/C
MUTE
MAIN L/R
SUB L/R
TS0
TS3
Monitor Out
Monitor (Y-C-V)
Monitor Audio Out (L/R)
5V to 3.3V IL01
Level Shifter
RESET 2
RESET 1
OneNAND assist
POWER 2
SYS-REST
S-REST
PNL-REST
DSP-REST
RESET
I/O
SW
TUNER RESET
I2C1
MUTE
Sub Y/V
PNL-ON
MUTE
2nd Fan (Panel)
with sufix (S/V or X)
GS00697
GS00696
FAN
Not in 42" models
with sufix (A)
Add PFA2 (Models with 2 fans)
PFA1
P42H401A, P42H4011A, P42T501A
Does not use a fan
Fan Control
TK73400
IP03
PTW
Swivel
OPT Out
Motor Driver
BA6287F IP05
Swivel Motor Drive
Optical Audio
Optical Audio
LAN Initialize
G-TXD, G-RXD
MDM-DCD, RESET
UEI
UEI
SYNC SEP
SYNC SEP
Sub CPU
M306H5
IH01
POWER1
SW 5V to 3.3V
QH01-QH04
(Level Shifter)
RESET1-IN
FAN DET
TV AFC
RS232C
Swivel
POWER OFF
(10Meg)
SD Y, C
AEP L, R
ASP L, R
I2C2
UART0
I2C0
I2C1
UART3
PNL-On
UART1
UART2
Peripheral
SD CARD
MAIN L/R
SUB L/R
OPT
Audio Switch
IF04
36.864Meg
Audio DSP
NJU26040
IF05
PWM
TAS5086
IF06
Digital AMP
TAS5142
IF07
Audio DAC
WM8620
IF12
Audio DAC
WM8620
IF13
ASP, AEP-RESET
S / PDIF
MUTE
TC7SZ125FU IF20
Audio / Opt
LED
IR
Key
PSL
PCST
PSC
PLS
LED PWB
CONTROL PWB
LED
IR
Key
PSPK
POWER SUPPLY
PPM2
CNPPS
+16V
+12V
+10V
+5.6V
16V
Both are actually 10V
Pin 9
Pins 13,14,15
Pin 7
Pin 1,2,3
AC IN
PSU
CN61
POWER SWITCH FILTER PWB
D+1.8V
D+1.3V
D+3.3V
DC/DC
MP2361
IG03
DC/DC
MP2361
IG01
DC/DC
TPS54310
IG02
Delay
IG06
SBY +5V
PPM1
CN63
Pin 1
Pin 4
Pin 7
Pin 6
Pin 5
Only High momentarily when AC removed
Power Off
POWER2
POWER1
AC Clock
POWER 2_Td
CN68
Vcego
Vsago
CN6
I2C2
Pin 49 and 50
SDA/SCL
Vsago turns on Va/Vs
Vcego turns on Vcc 5.1V
PNL ON turns on Vsago
PNLRST turn on Vcego
EC01
CN1
PANEL
Logic PWB
Not Used In Plasma
"LVDS Duel"
TA2-TE2 (Used only V/S/X models)
17,19,21,23)
TA1-TE1 (Pins 1,3,5,7,9,11,
TA2-TE2 (Not Used)
Pin 12 (CPUGO)
Pin 14 (PDPGO)
See CN68 Connector
Notes about PNLRST, PNLON
40 - 27
24 - 11
43 PNLRST
42 PNL ON
FC8
DDR2 SDRAM
256Mbit X 3
333MHz
FC8
RESET2
DC/DC
TPS54310
DC/DC
TPS54310
POWER 2_Td
FC8 (27Meg)
I2C1
NOTE
SBY Pow Block
+12V Pow Block
+10V Pow Block
+5.6V Pow Block
Power Line
Power Control
Clock
Reset 1, 2
Others

CH9

BACK TO CHANGE PAGE

CONNECTION DIAGRAM


WIRING CONNECTION DIAGRAM
AC IN
AC INLET
FILTER PWB
PFAC VH-3P
PPU1 VH-4P
Power Supply Unit
CN84 VH-10P
CN81 VH-6P
CN88 PH-9P
CN83 EH-8P
CNPPS EH-15P
PDP Module
CN23 VH-10P
CN8 PH-9P
CN1 DF13-30DP
Main Digital PWB
PPM1 ZH-08H1
PPM2 DF3D-15H
PPM3 PA-6V
EC01 FI-RE51S
FRAME GND
TERMINAL PWB
PSM 501497-160VS
PMS1 501493-160VP
FAN
PFA1 ZH-03H1
VCC
LoCK
GND
PSPK PA-04V
SP (L)
SP (R)
CONTROL PWB
PCST GH-14V
PTC GH-10V
PSC GH-04H1
LED PWB
PLS 501331-11V
PSL 501568-11H
SD PWB
PSD 501568-12H
PDS 501331-12V
PH03 FIB-31H
PH01 FIB-31V

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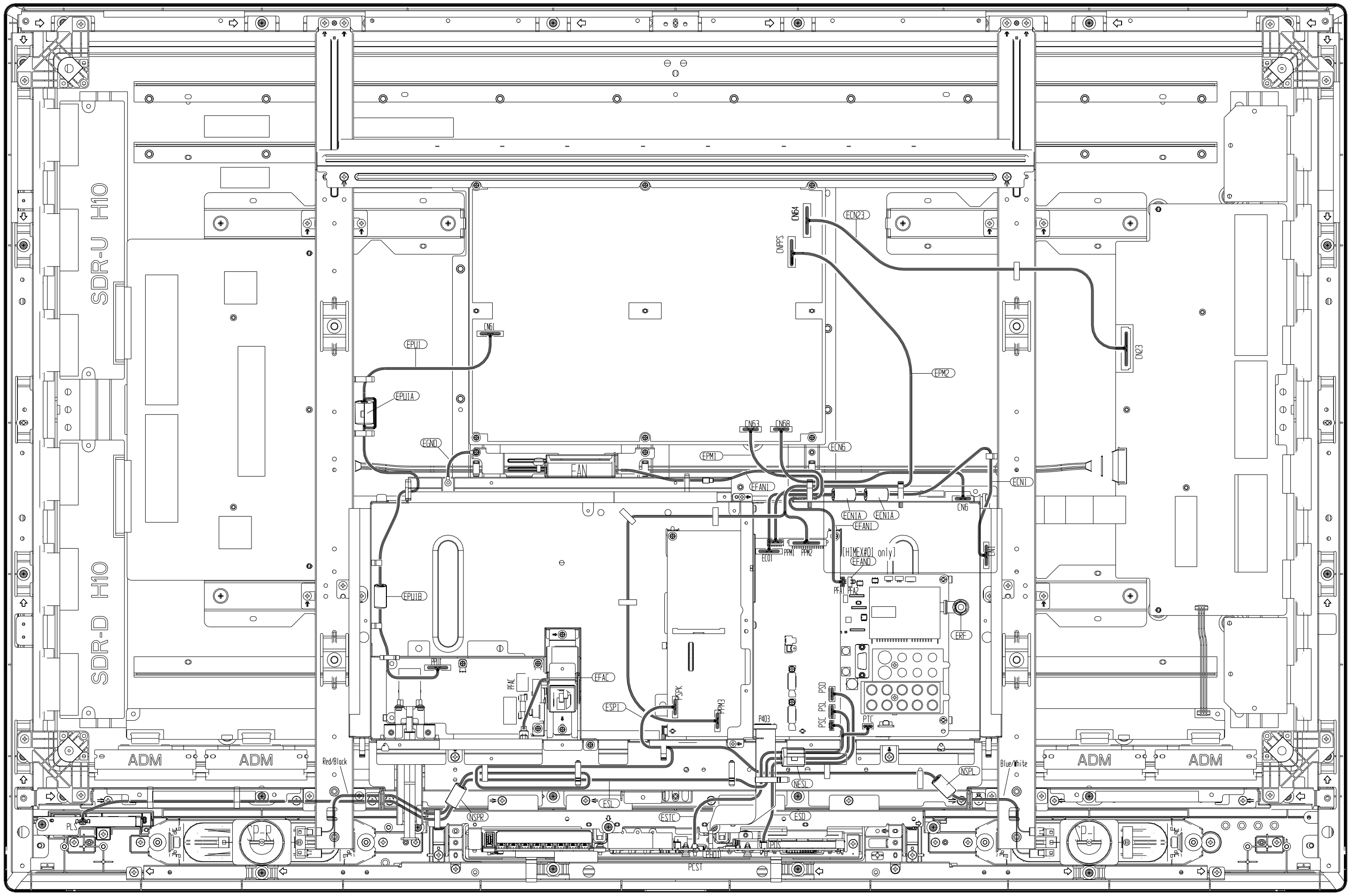
FINAL WIRING DIAGRAM

Table of Using cable

Connector wire		Plug Pin 1		Plug Pin 2	
Name	Assy List	Board or Location	Name	Board or Location	Name
ESTC	Final Ass'y	CONTROL	PCST	TERMINAL MAIN DIGITAL	PTC PSC
ESL	Final Ass'y	MAIN DIGITAL	PSL	LED	PLS
ESD	Final Ass'y	MAIN DIGITAL	PSD	SD	PDS
EFAN1	Final Ass'y	TERMINAL	PFA1	FAN1	-
ESP1	Final Ass'y	MAIN DIGITAL	PSPK	SP-L/R	SP-L SP-R
EPM1	Final Ass'y	POWER	CN63	MAIN DIGITAL	PPM1
EPM2	Final Ass'y	POWER	CNPPS	MAIN DIGITAL	PPM2 PPM3
EPU1	Final Ass'y	POWER	CN61	FILTER	PPU1
ECN23	Final Ass'y	POWER	CN64	PANEL X-SUS	CN23
ECN6	Final Ass'y	POWER	CN68	PANEL LOGIC	CN6
ECN1	Final Ass'y	MAIN DIGITAL	EC01	PANEL	CN1
EFAC	Final Ass'y	FILTER CHASSIS METAL	PFAC GND	INLET	-
EGND	Final Ass'y	CHASSIS METAL	-	PANEL BASE	-

When (#C101) DW3 CHASSIS CASE(P#NA90551) is used , this drawing is applied.


SDR-U H10
SDR-D H10
FAN
EPU1
EPU1A
EPU1B
EGND
CN61
CN63
CN68
CN64
CNPPS
ECN23
CN23
EPM1
EPM2
ECN6
EFAN1
ECN1A
ECN1
CN6
EFAC
ESP1
ERF
P403
[HIMEX01 only]
ADM
ADM
ADM
ADM
Red/Black
Blue/White
NSPL
NESL
NSPR
ESL
ESTC
ESD
PCST
SP-R
SP-L

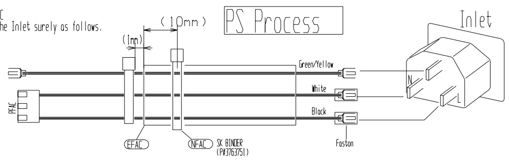
*1 Regarding (ECN23) and (ECN6) .
insert connectors while installing Power Supply PWB
in the panel.

Specification

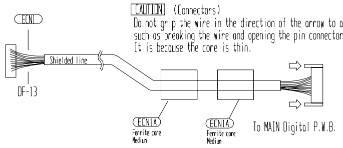
1. This drawing shows the wiring diagram for 50"PDP Chassis.
   The connection and wire styling are in the figure.
2. This drawing shows the rear view of the set.
3. Lock lead holders surely.
4. Cores with ( ) round brackets should be deliveried integrated with Harness.

(EFAC) Preparation.

Insert Foston of EFAC
in the terminal of the Inlet surely as follows.


(10mm)
(1mm)
PS Process
Inlet
Green/Yellow
White
Black
N
L
PFAC
EFAC
NFAC
SK BINDER
(P#3763751)
Foston

[The Inlet is built in by final Ass'y Drawing(UQ3750).]


ECN1
Shielded line
DF-13
ECN1A
Ferrite core
Mediun
ECN1A
Ferrite core
Mediun
To MAIN Digital P.W.B.

CAUTION (Connectors)
Do not grip the wire in the direction of the arrow to avoid defects.
such as breaking the wire and opening the pin connector port.
It is because the core is thin.

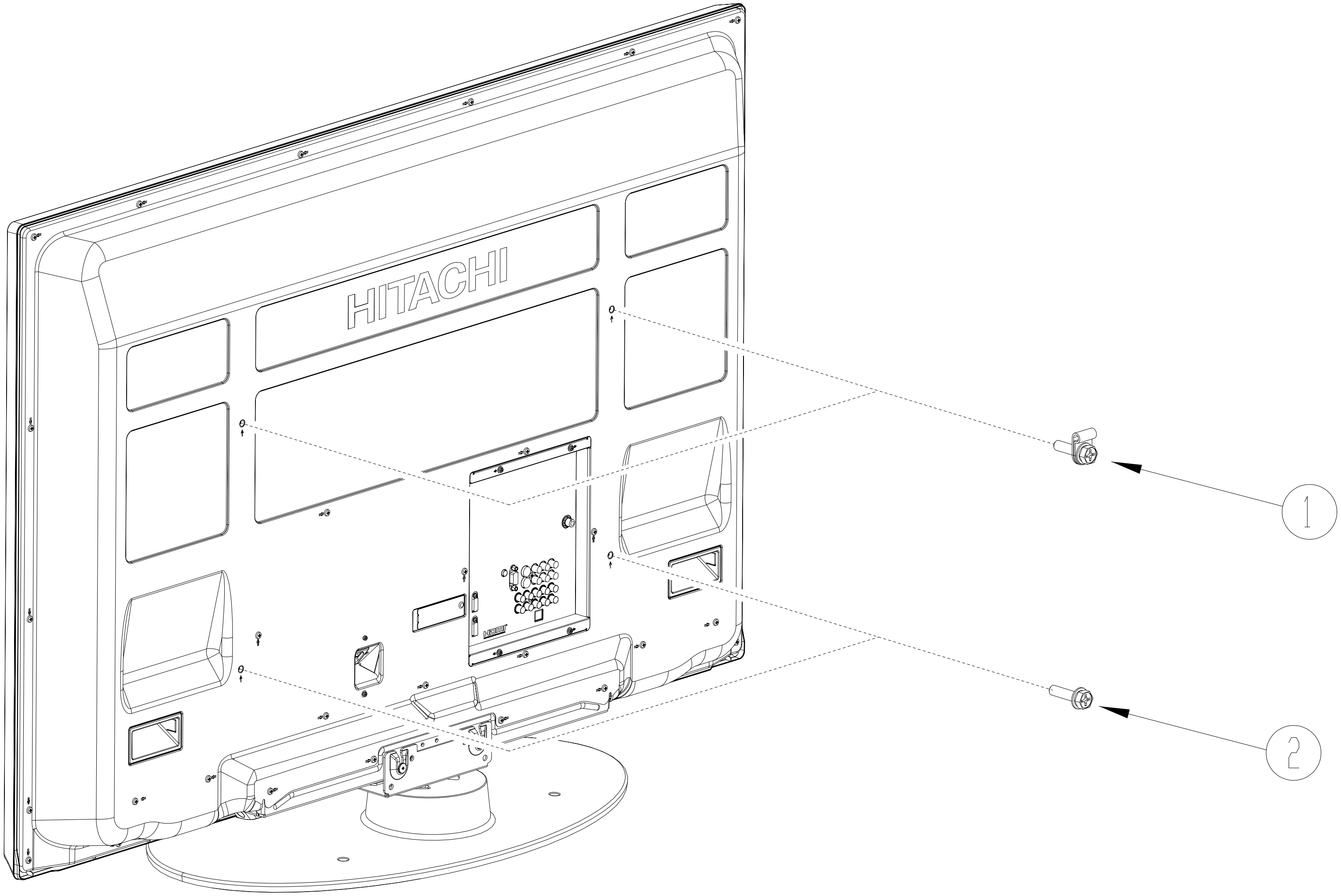
"ECN1(LVDS)" has a fragile connector housing.
Be careful not to break it during the connecting operation..
During the connecting operation,push carefully both side housing latch terminal
to the insert direction not to break it.

Push the arrow point to
insert direction
straightforward.

QUICK DISASSEMBLE GUIDE (Back Cover 1)

① Remove Screw M3M 6*18 (2 pcs.)
M6 Cable Clamp (2 Pcs.)

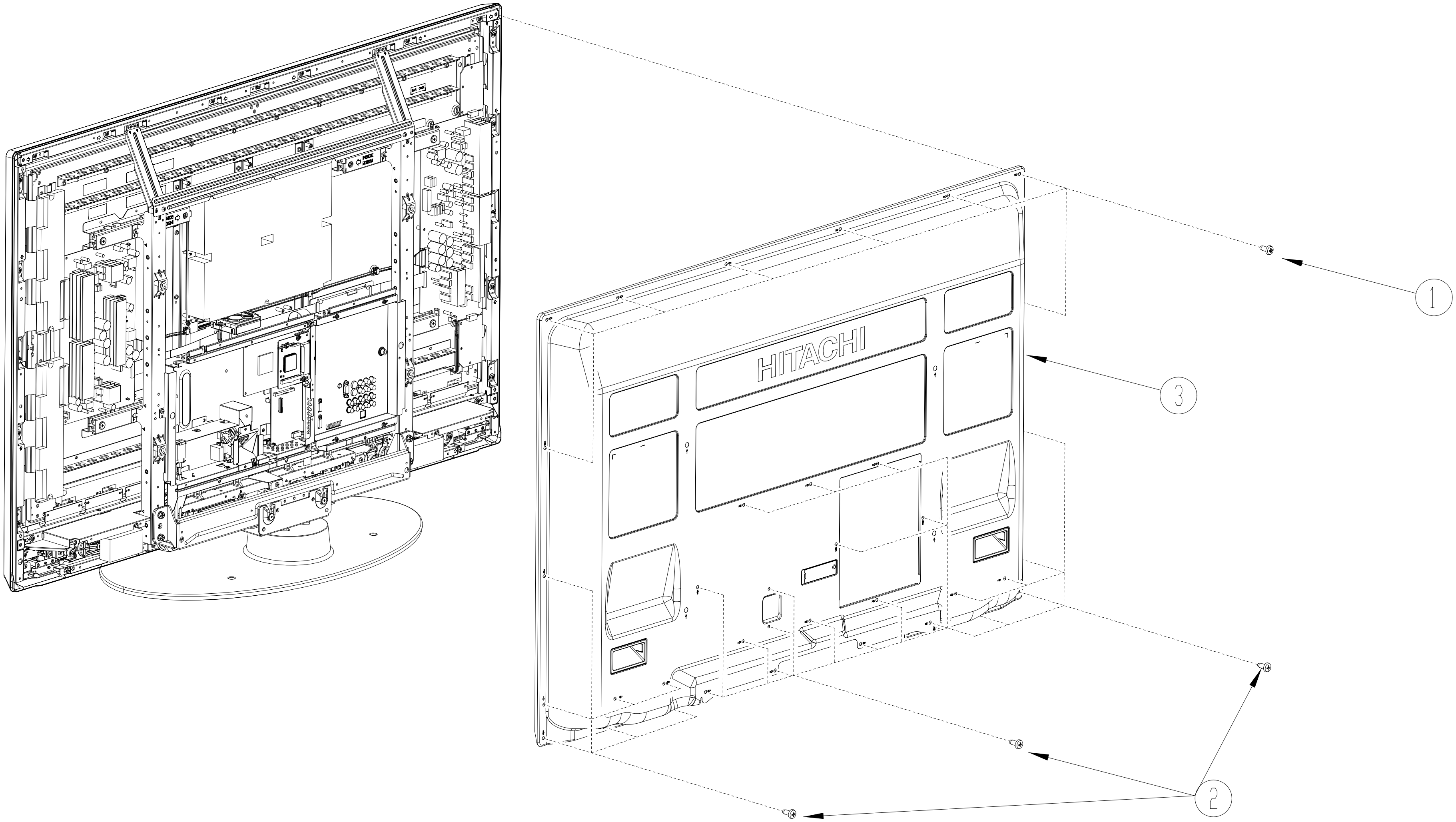
② Remove Screw M3M 6*18 (2 pcs.)



QUICK DISASSEMBLE GUIDE (Back Cover 2)

① Remove Screw M3D 4*10 (26 pcs.)
Screw M3S 3*8 (11 pcs.)

② Remove Back Cover



QUICK DISASSEMBLE GUIDE (Power Unit, Fan Ass'y)

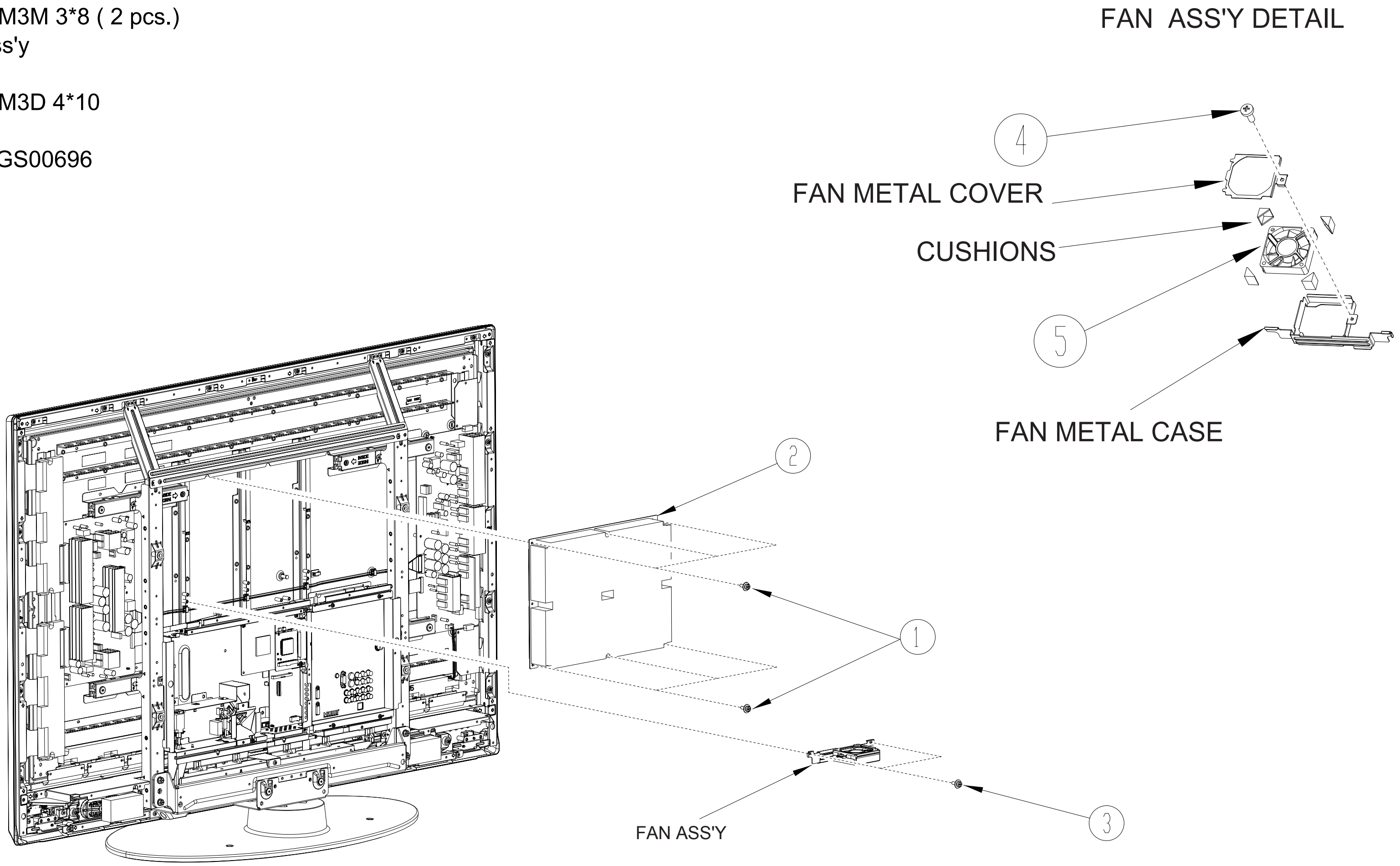
① Remove Screw M3M 3*8 (4 pcs.)
Screw M3E 3*8 (2 pcs.)

② Remove Power Unit P#HA01912

③ Remove Screw M3M 3*8 (2 pcs.)
Fan Ass'y

④ Remove Screw M3D 4*10

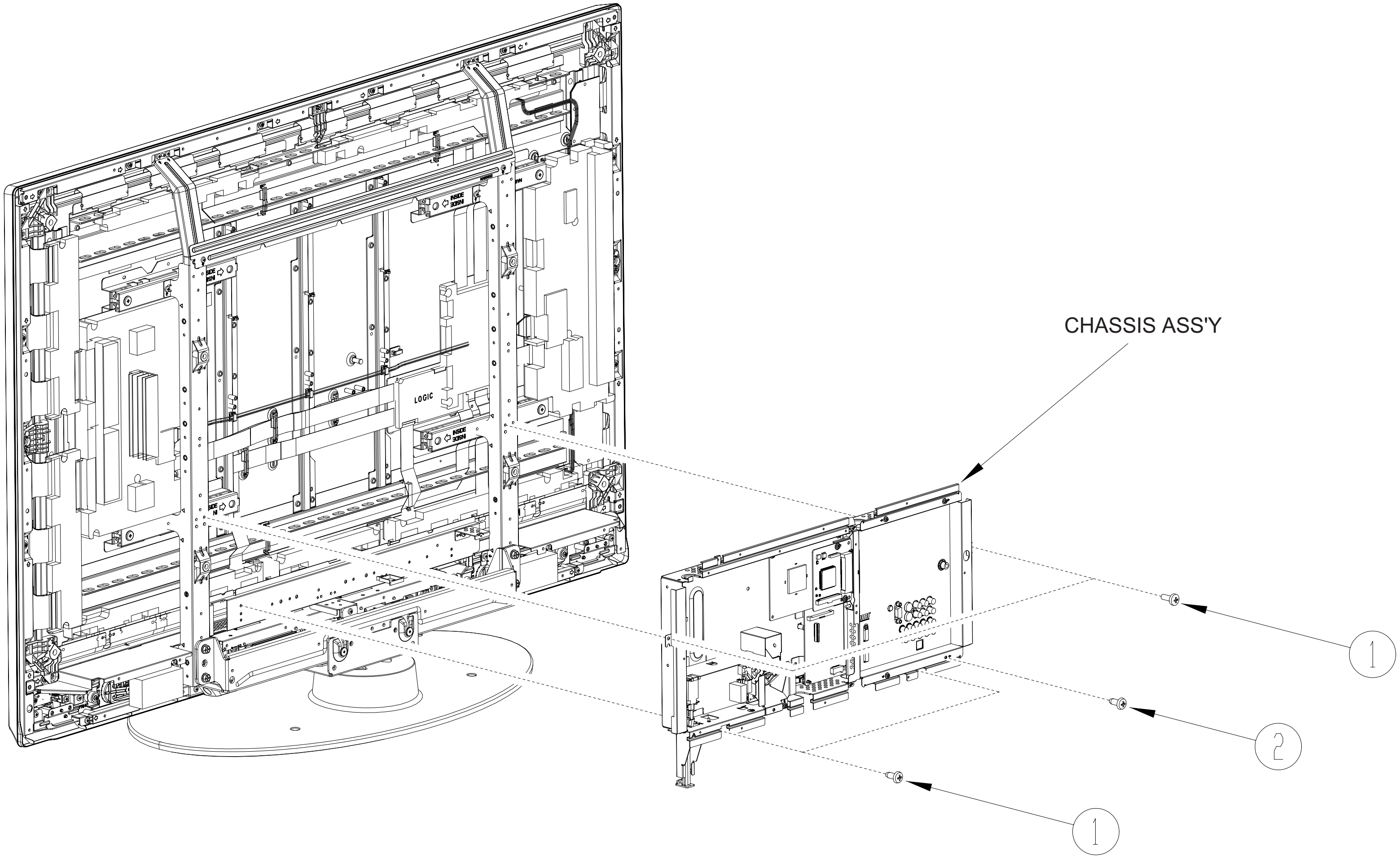
⑤ Remove Fan P#GS00696


FAN ASS'Y DETAIL
4
FAN METAL COVER
CUSHIONS
5
FAN METAL CASE
2
1
FAN ASS'Y
3

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 1)

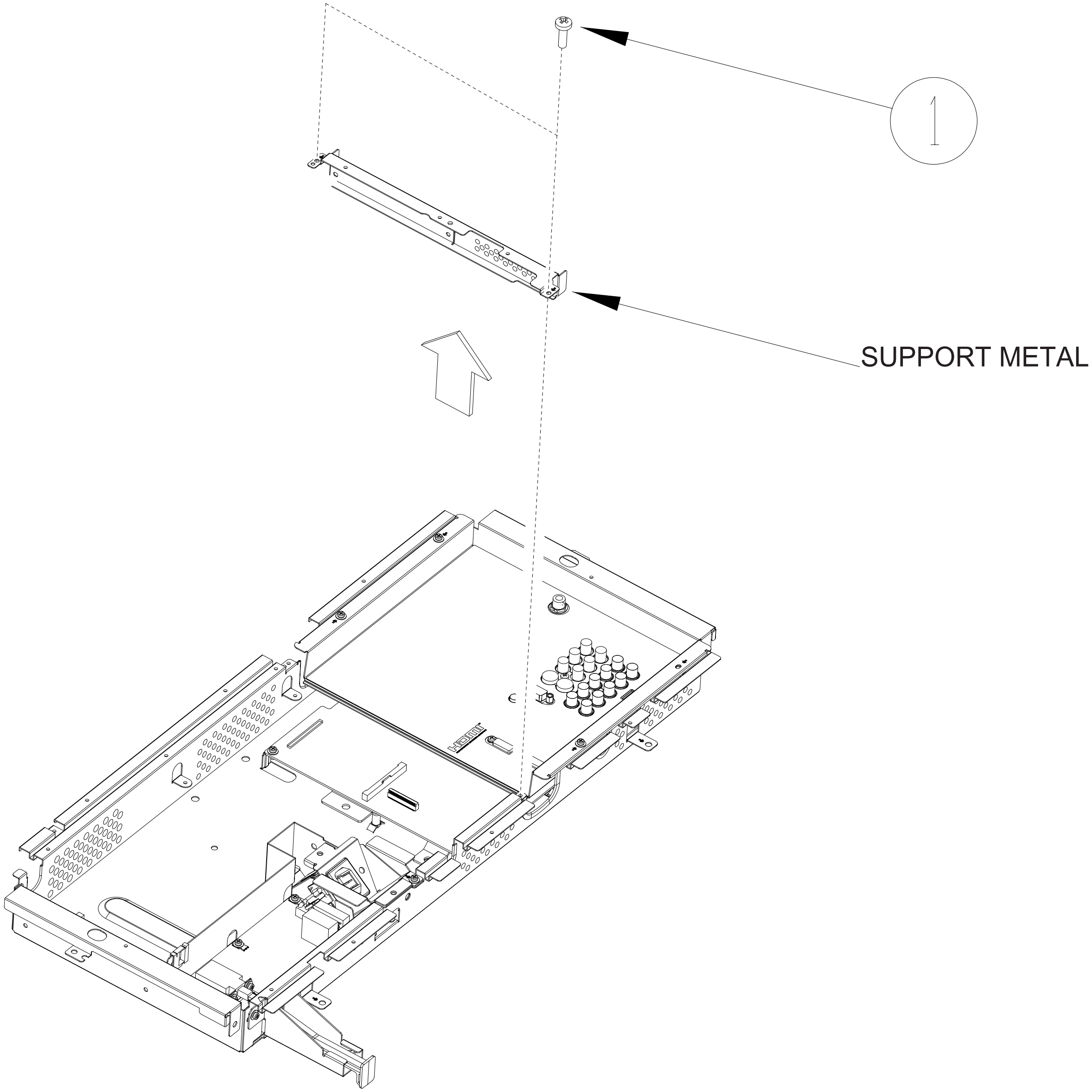
① Remove Screw M3S 3*8 (4 pcs.)

② Remove Screw M3C 4*10
Chassis Ass'y P#UE27031


CHASSIS ASS'Y
1
2
1
LOGIC
INSIDE

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 2)

① Remove Screw M3E 3*8 (2 pcs.)
Support Metal


1
SUPPORT METAL

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 3)

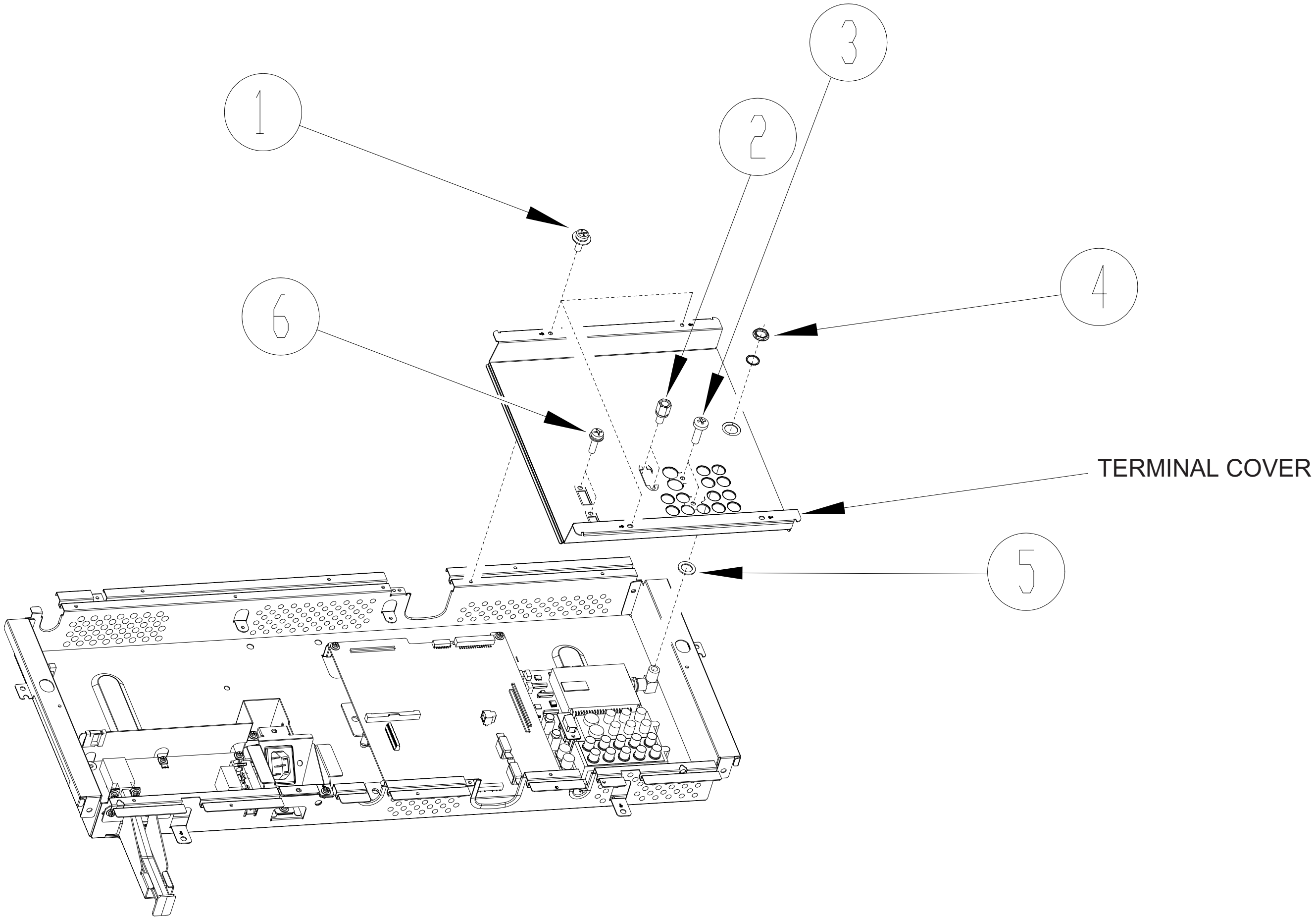
① Remove Screw M3S 3*8 (3 pcs.)

② Remove Screws D-Sub (2 Pcs.)

③ Remove Screws T2B 3*10 (2 Pcs.)

④⑤Remove Tuner Nut & Washers

⑥ Remove Screw M3M 3*6 (2 pcs.)



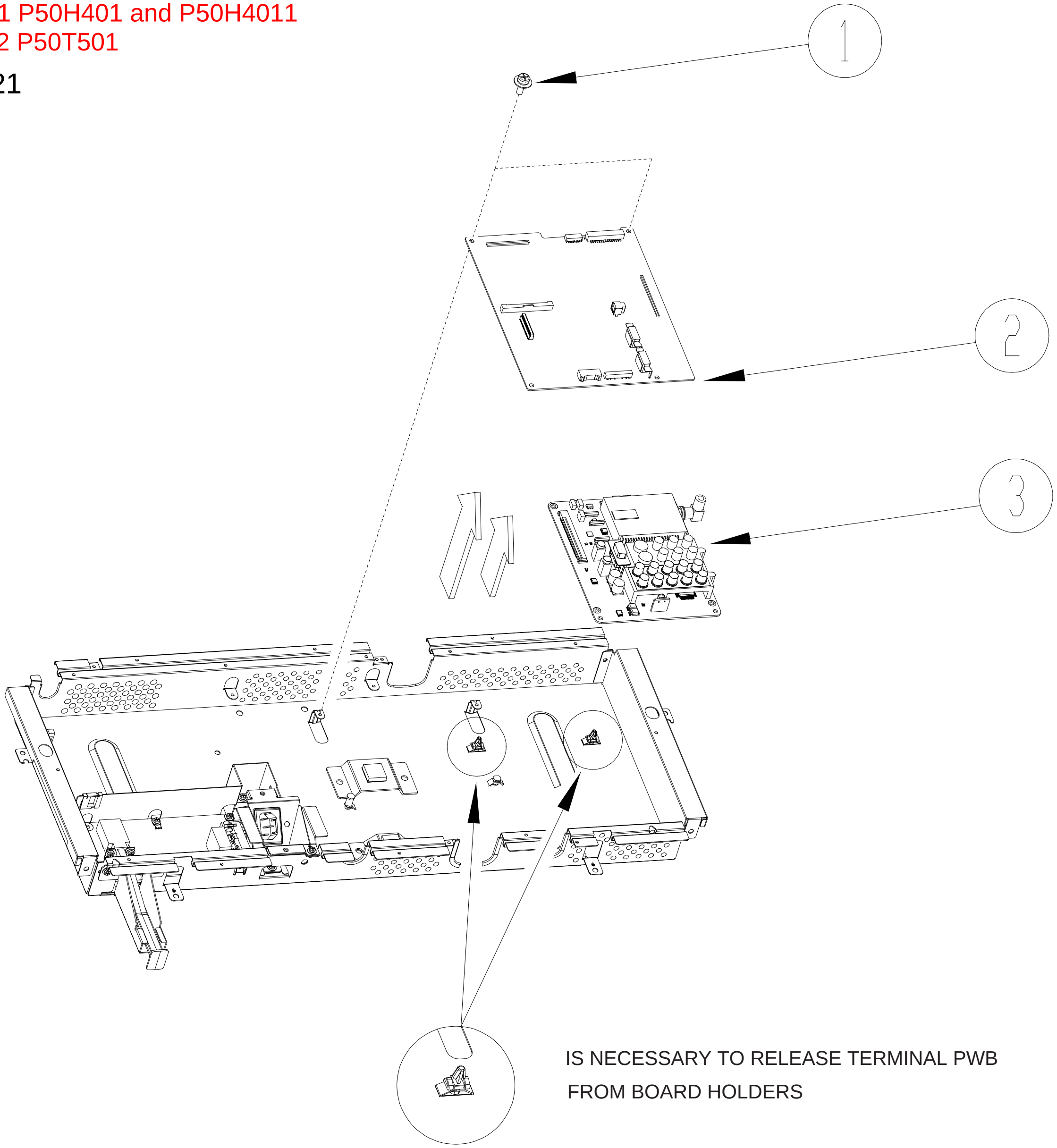
1
3
2
4
6
TERMINAL COVER
5

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 4)

① Remove Screw M3E 3*8 (2 pcs.)

② Remove Digital Main Ass'y P/N UX28021 P50H401 and P50H4011
P/N UX28022 P50T501

③ Remove Terminal PWB Ass'y P# JP55121



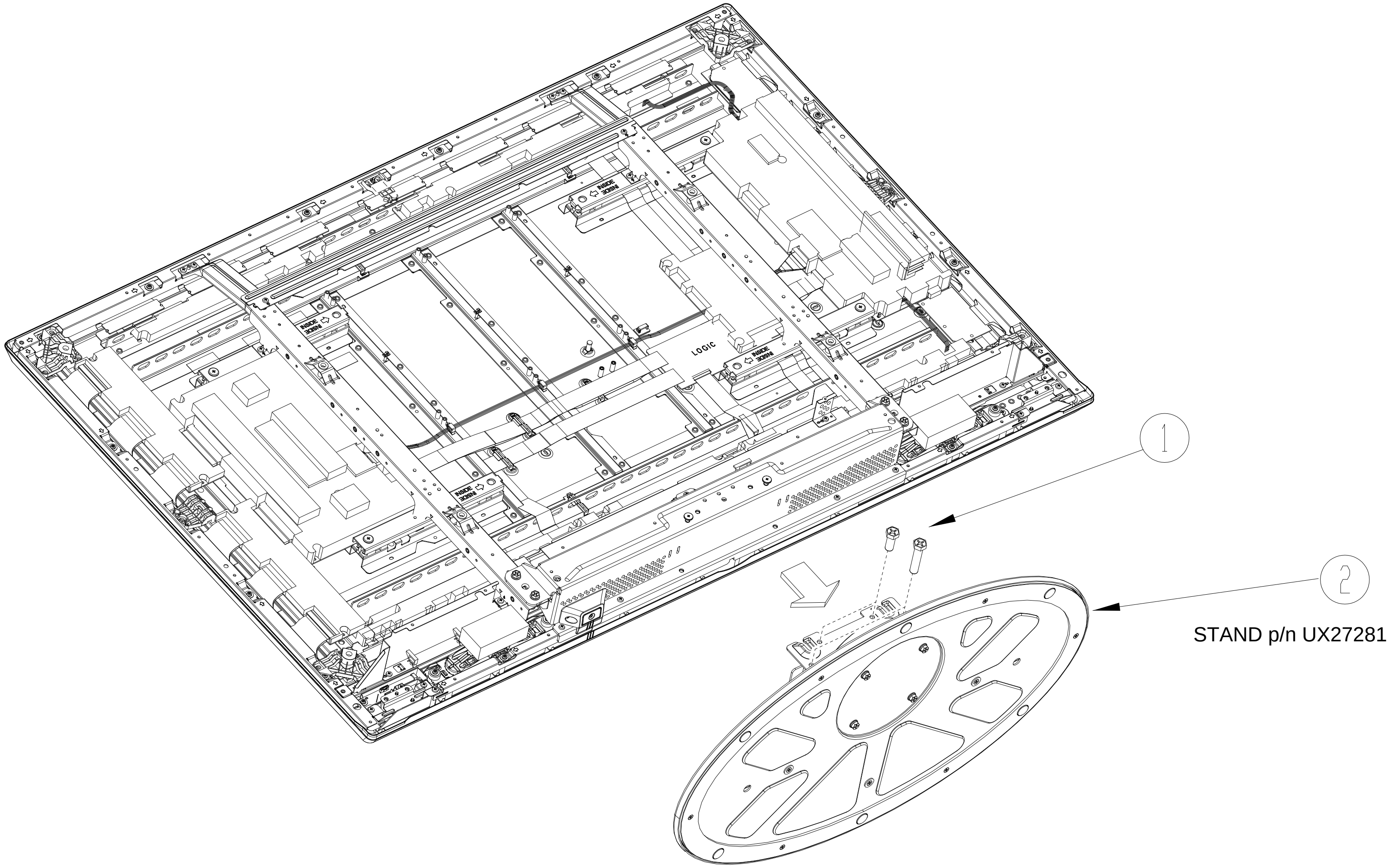
IS NECESSARY TO RELEASE TERMINAL PWB
FROM BOARD HOLDERS

QUICK DISASSEMBLE GUIDE (Stand Ass'y, Control Panel Ass'y)

① Remove Screw HEX M5*15(2 Pcs.)
Screw HEX M5*85(2 Pcs.)

② Remove Stand Ass'y P#UX27281(50")

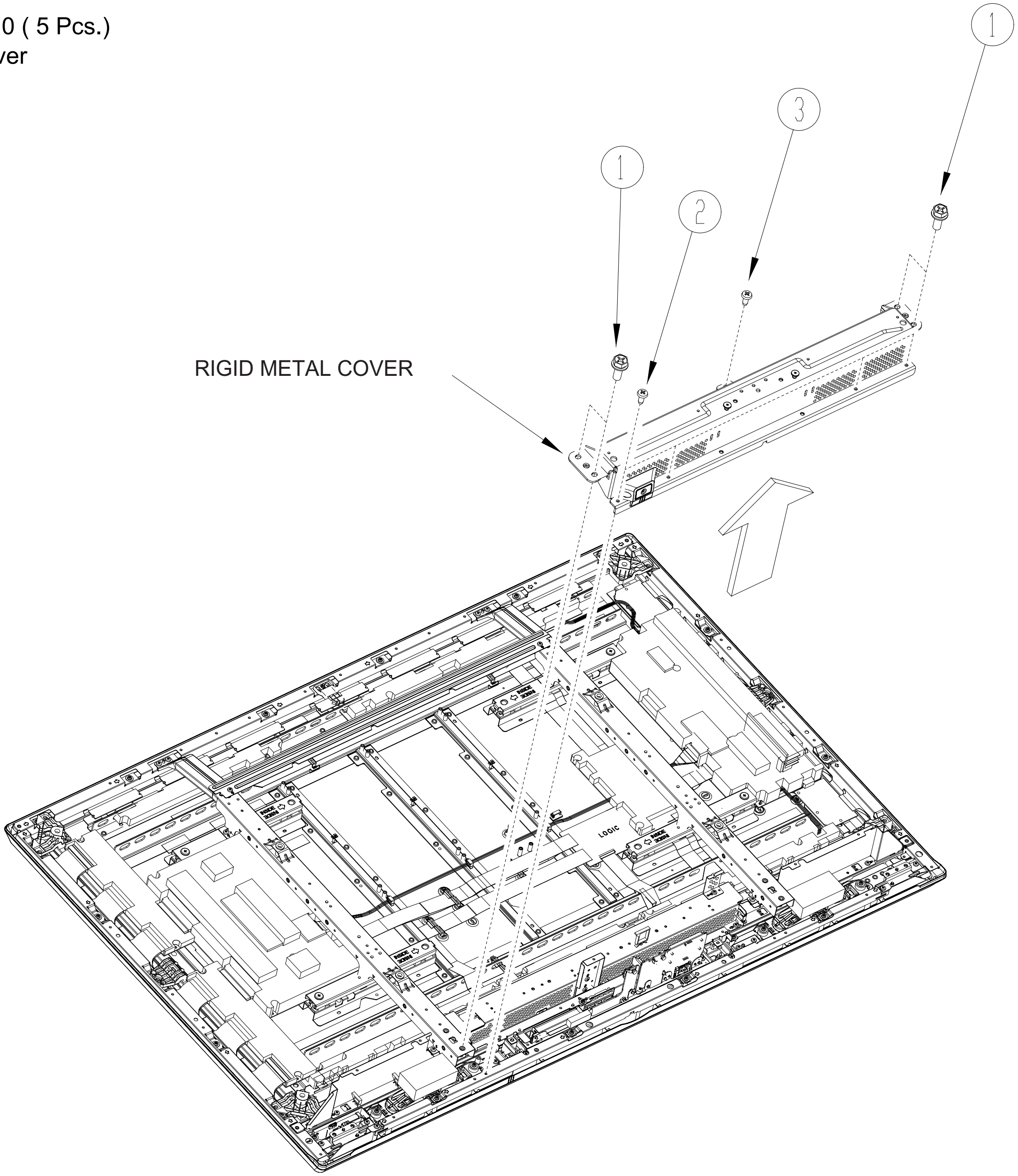
*Note: In order to remove stand ass'y is necessary to place Plasma TV carefully on horizontal direction over a soft surface to avoid scratches or other damages.



QUICK DISASSEMBLE GUIDE (Control Panel Ass'y 2)

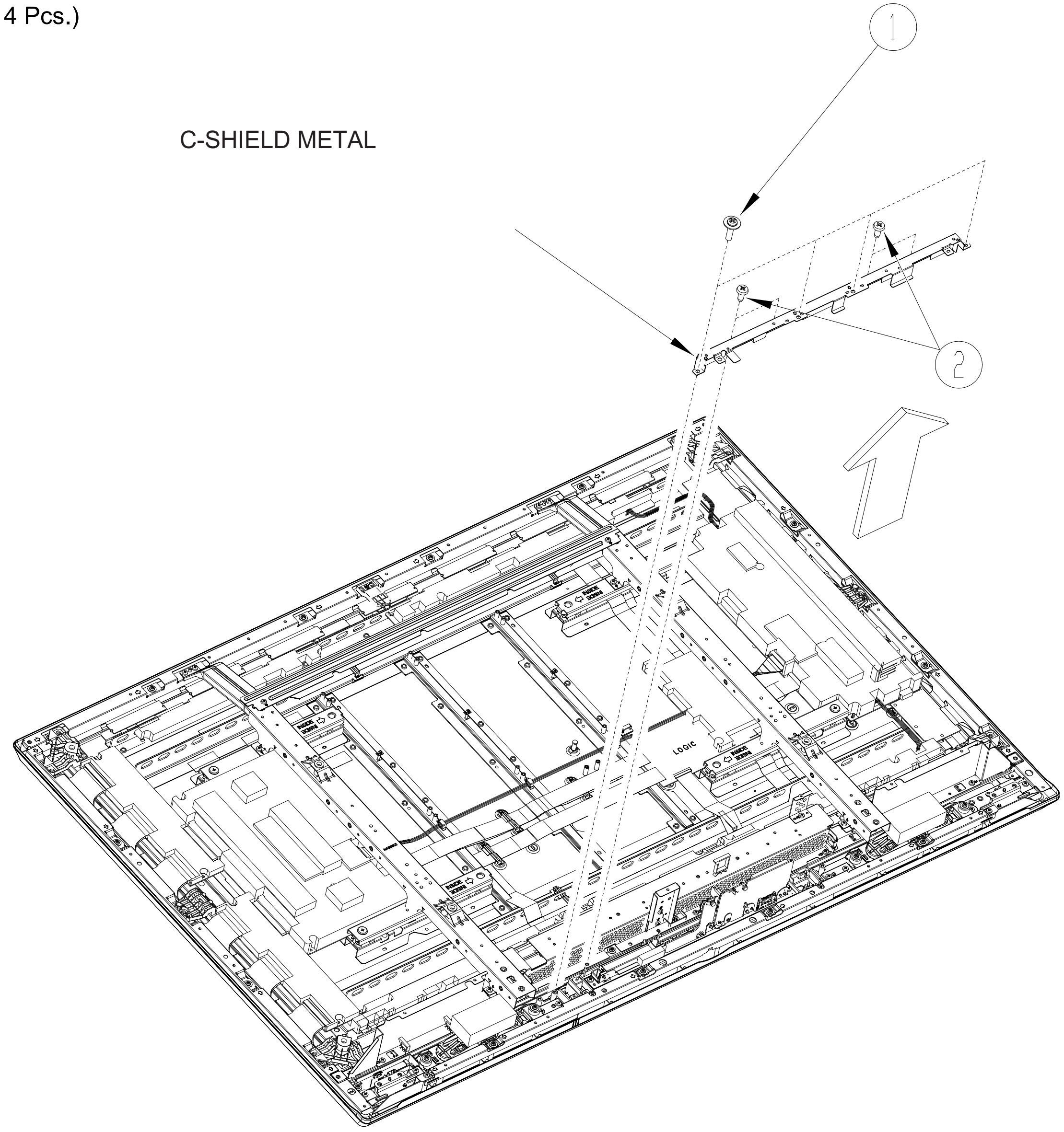
① Remove Screw M3M 6*18 (4 Pcs.)

② Remove Screw M3D 4*10 (5 Pcs.)
Rigid Metal Cover


1
3
1
2
RIGID METAL COVER
LOGIC

QUICK DISASSEMBLE GUIDE (Control Panel Ass'y 3)

① Remove Screw M3D 4*10 (4 Pcs.)
Screw T2B 4*16 (4 Pcs.)
C Metal Shield


C-SHIELD METAL
1
2
LOGIC

QUICK DISASSEMBLE GUIDE (Control Panel Ass'y 4)

① Remove Screw M3D 4*10 (2 Pcs.)
Control Panel Ass'y

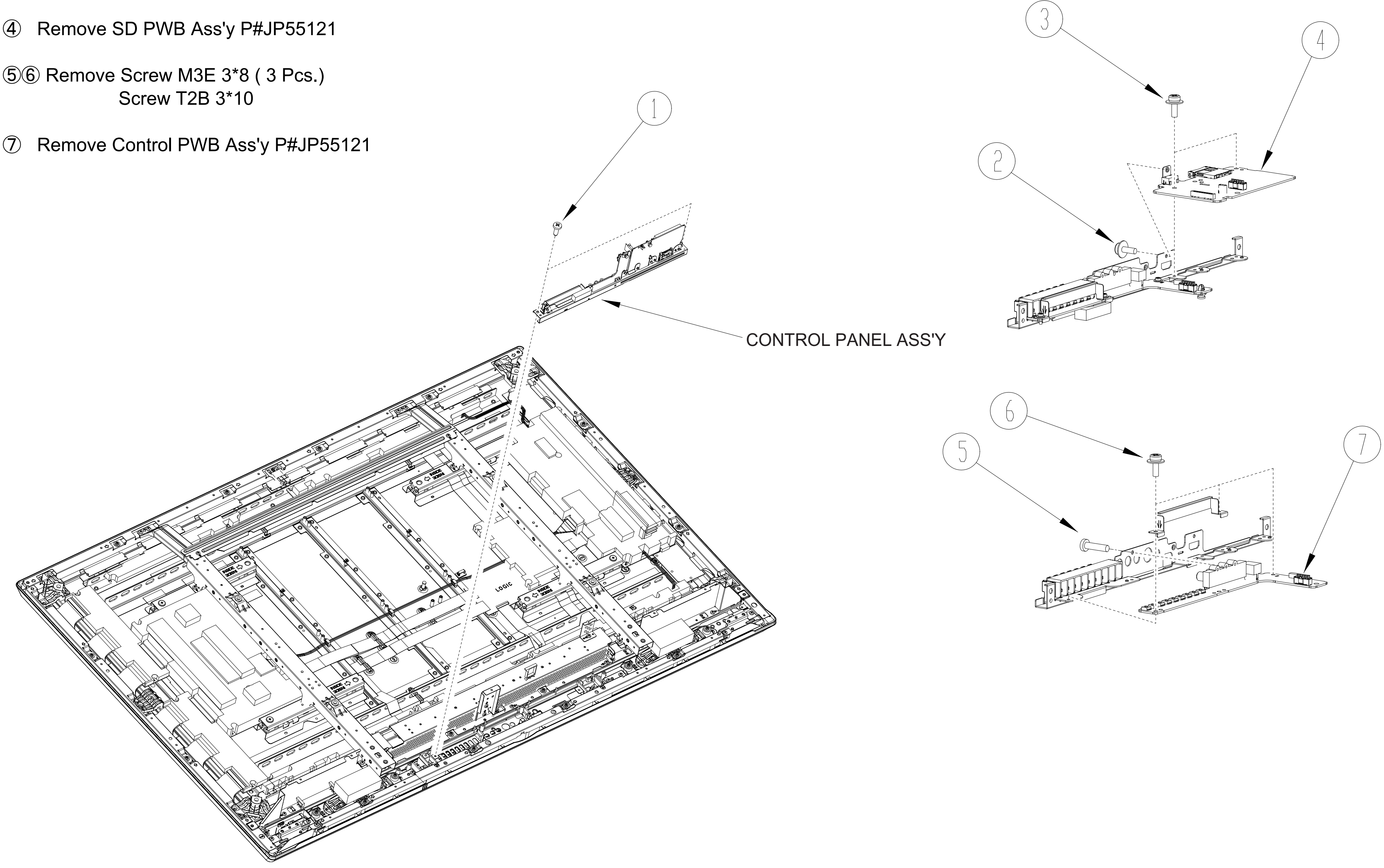
②③ Remove Screw M3D 4*10 (2 Pcs.)

④ Remove SD PWB Ass'y P#JP55121

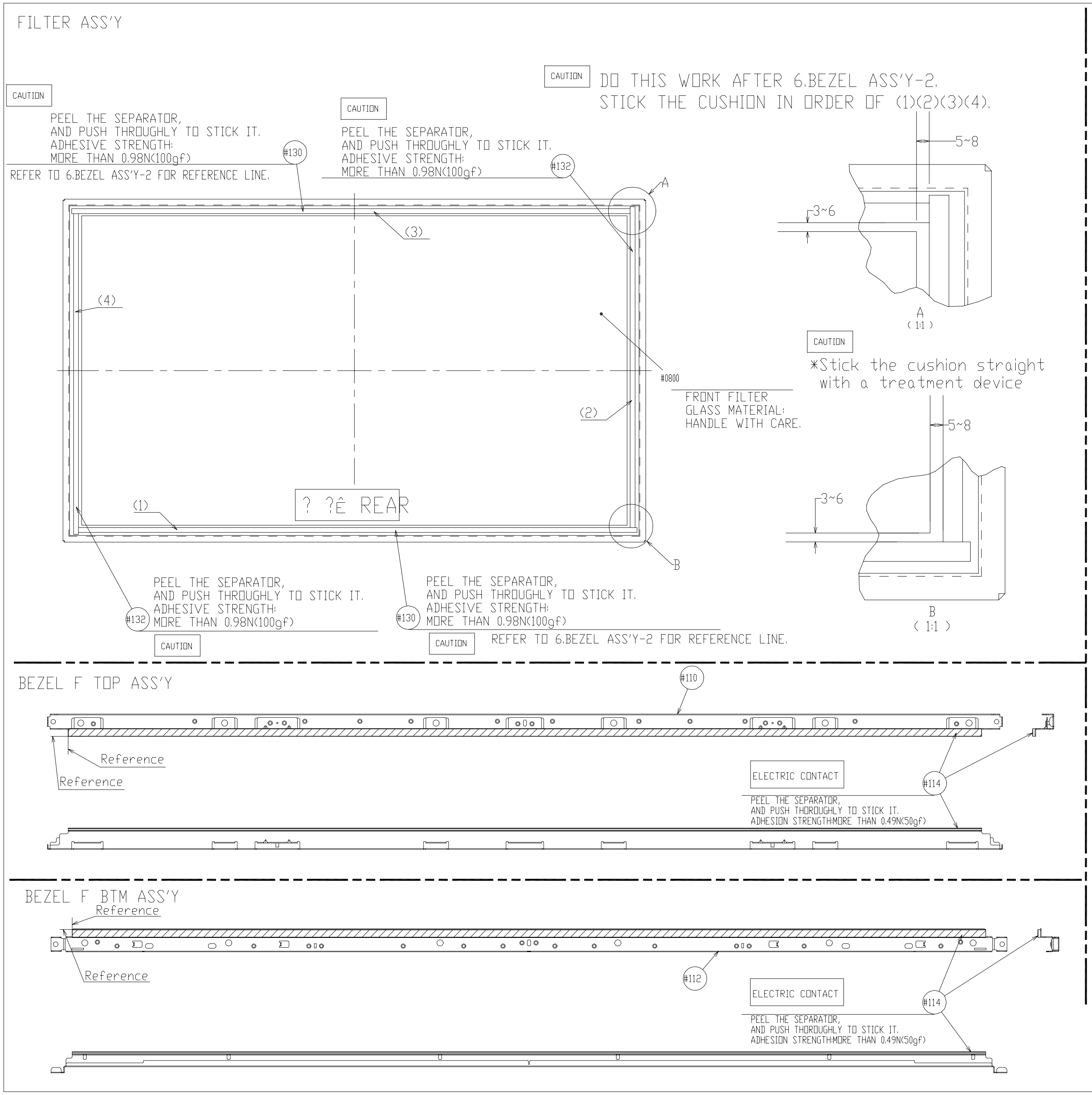
⑤⑥ Remove Screw M3E 3*8 (3 Pcs.)
Screw T2B 3*10

⑦ Remove Control PWB Ass'y P#JP55121

CONTROL DOOR p/n PH41803


CONTROL PANEL ASS'Y DETAIL
3
4
2
1
CONTROL PANEL ASS'Y
6
5
7
LOGIC

FINAL ASSEMBLY GUIDE


FILTER ASS'Y
CAUTION
PEEL THE SEPARATOR,
AND PUSH THROUGHLY TO STICK IT.
ADHESIVE STRENGTH:
MORE THAN 0.98N(100gf)
REFER TO 6.BEZEL ASS'Y-2 FOR REFERENCE LINE.
#130
CAUTION
PEEL THE SEPARATOR,
AND PUSH THROUGHLY TO STICK IT.
ADHESIVE STRENGTH:
MORE THAN 0.98N(100gf)
#132
CAUTION
DO THIS WORK AFTER 6.BEZEL ASS'Y-2.
STICK THE CUSHION IN ORDER OF (1)(2)(3)(4).
A
(3)
(4)
#0800
FRONT FILTER
GLASS MATERIAL:
HANDLE WITH CARE.
(2)
(1)
? ?Ê REAR
B
5~8
3~6
A
(1:1)
CAUTION
*Stick the cushion straight
with a treatment device
5~8
3~6
B
(1:1)
PEEL THE SEPARATOR,
AND PUSH THROUGHLY TO STICK IT.
ADHESIVE STRENGTH:
MORE THAN 0.98N(100gf)
#132
CAUTION
PEEL THE SEPARATOR,
AND PUSH THROUGHLY TO STICK IT.
ADHESIVE STRENGTH:
MORE THAN 0.98N(100gf)
#130
CAUTION
REFER TO 6.BEZEL ASS'Y-2 FOR REFERENCE LINE.
BEZEL F TOP ASS'Y
#110
Reference
Reference
ELECTRIC CONTACT
#114
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.49N(50gf)
BEZEL F BTM ASS'Y
Reference
Reference
#112
ELECTRIC CONTACT
#114
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.49N(50gf)

FINAL ASS'Y PARTS

Bezel Assy #110, #112, #120, and #122 come as an Assembly

SYM	P#	DESCRIPTION
	QD61774	P50H401 BEZEL ASSEMBLY
	QD61774	P50H401A BEZEL ASSEMBLY
	QD61775	P50T501 / P50T501A BEZEL ASSEMBLY
	QD61776	P50H4011 / P50H4011A BEZEL ASSEMBLY
#114	MF02361	EMI GASKETS
#124	MF02362	EMI GASKETS
#130	MF02362	PANEL CUSHION 50 TB
#132	MF02362	PANEL CUSHION 50 LR
#0800	KS22031K	50MIO1ME36%F. FILTER

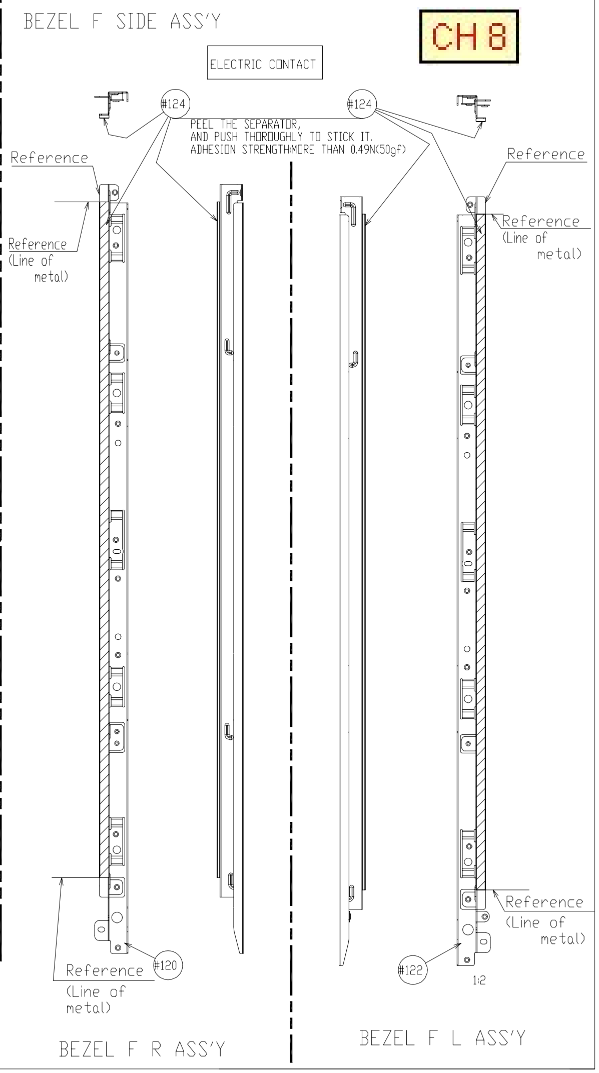
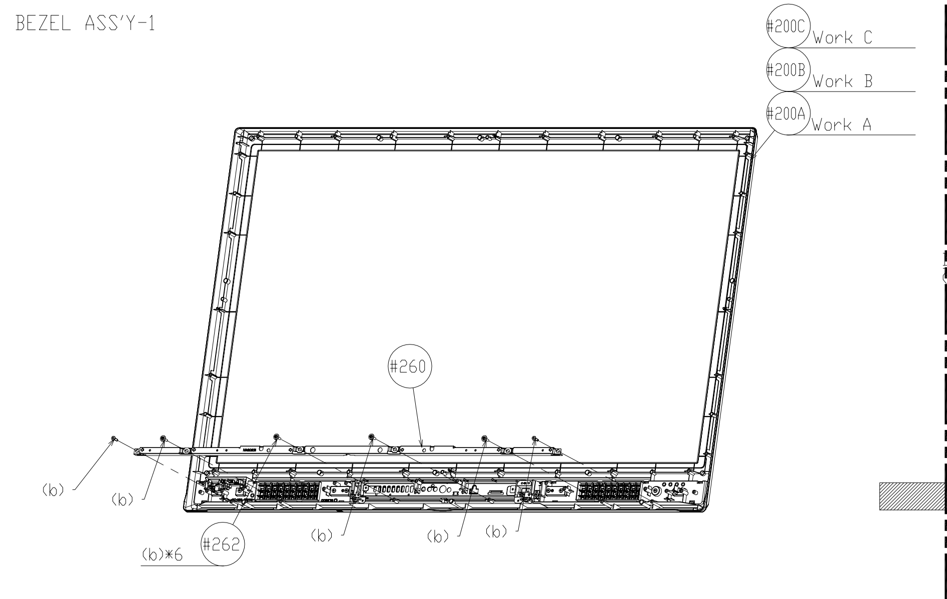

BEZEL F SIDE ASS'Y
CH 8
ELECTRIC CONTACT
#124
#124
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.49N(50gf)
Reference
Reference
Reference
(Line of
metal)
Reference
(Line of
metal)
Reference
(Line of
metal)
#120
Reference
(Line of
metal)
#122
1:2
BEZEL F R ASS'Y
BEZEL F L ASS'Y

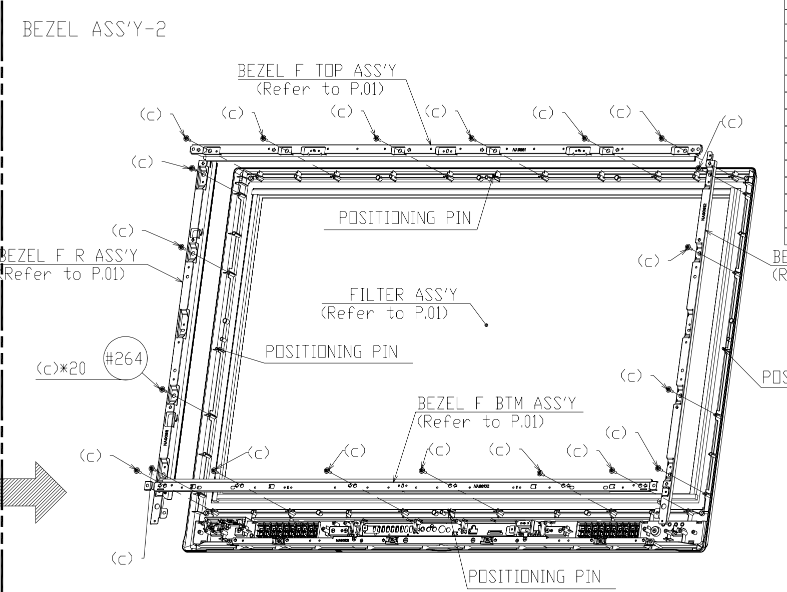
TABLE OF CONTENTS

FINAL ASSEMBLY GUIDE

BEZEL ASS'Y-1

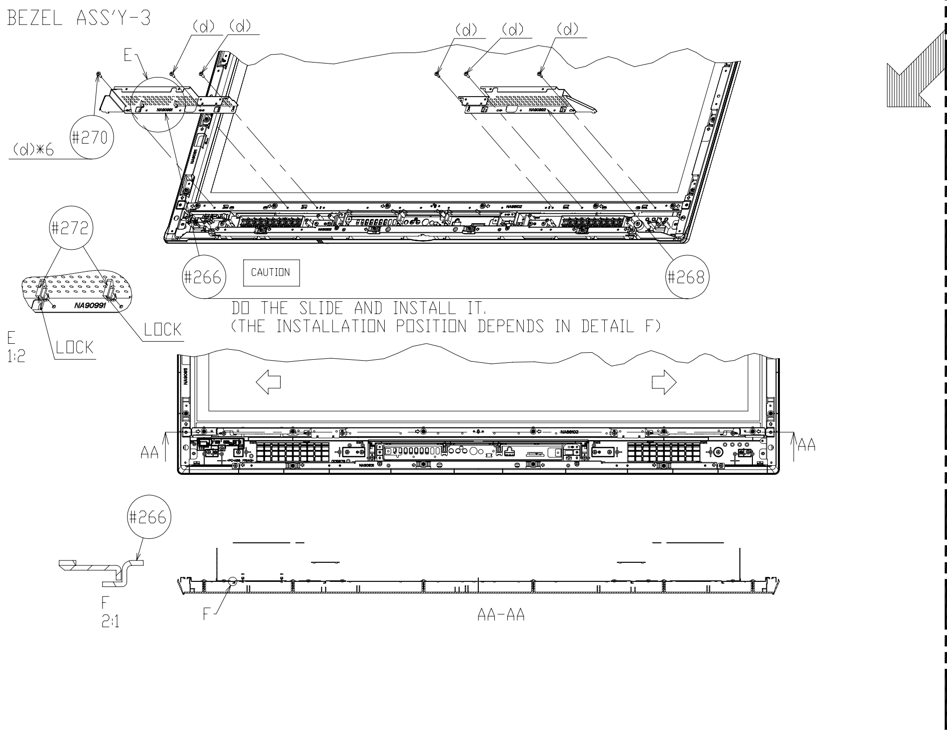

#200C Work C
#200B Work B
#200A Work A
#260
(b)
(b)
(b)*6
#262
(b)
(b)
(b)

BEZEL ASS'Y-2

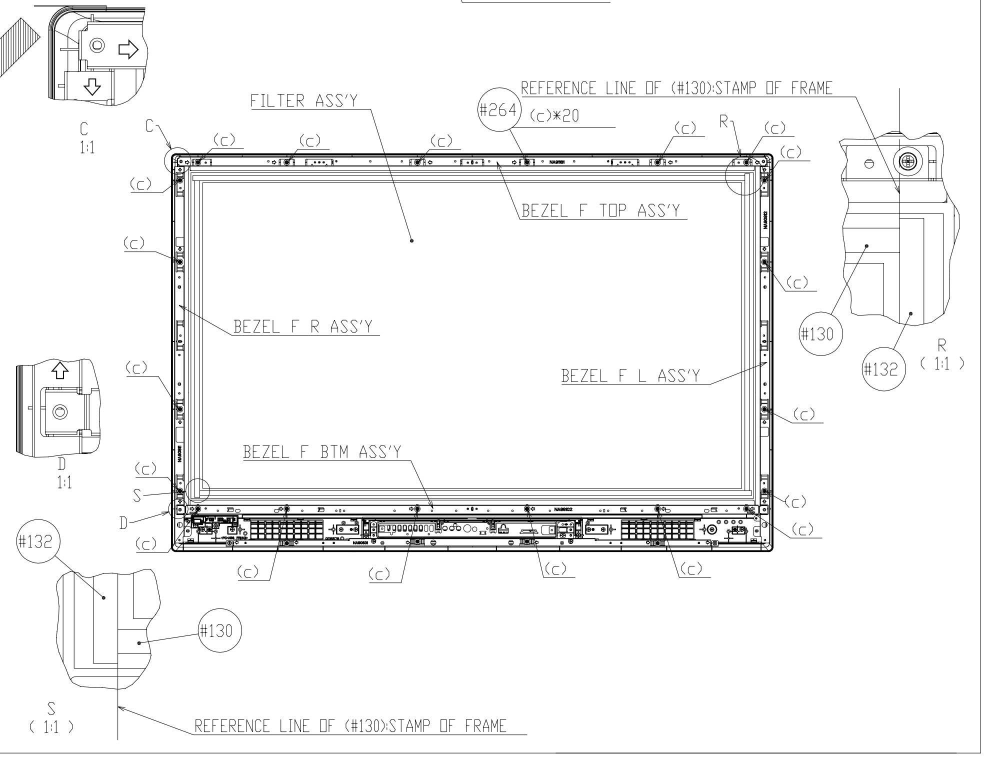

BEZEL F TOP ASS'Y
(Refer to P.01)
(c)
POSITIONING PIN
BEZEL F R ASS'Y
(Refer to P.01)
BEZEL F L ASS'Y
(Refer to P.01)
FILTER ASS'Y
(Refer to P.01)
POSITIONING PIN
(c)*20
#264
POSITIONING PIN
BEZEL F BTM ASS'Y
(Refer to P.01)
POSITIONING PIN

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#130	MN30583	PANEL CUSHION 50 TB
#132	MN30584	PANEL CUSHION 50 LR
#260	NA90831	DW3 50US BOTTOM FRAME
#262	MJ04013	SCRW T2B_4*16
#264	MJ04013	SCRW T2B_4*16
#266	NA90991	DW3_50_BOTTM_SHIELD_R
#268	NA90992	DW3_50_BOTTM_SHIELD_L
#270	MJ04067	SCRW M3D_4*10
#272	ML02731	WIRE CLAMP

BEZEL ASS'Y-3

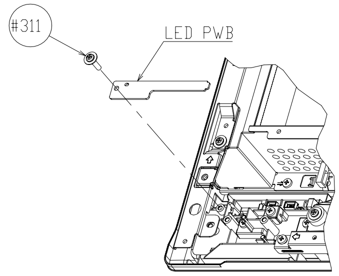

(d)
E
(d)*6
#270
#272
NA90991
E 1:2
LOCK
LOCK
#266
CAUTION
#268
AA
AA
#266
F 2:1
F
AA-AA

DO THE SLIDE AND INSTALL IT.
(THE INSTALLATION POSITION DEPENDS IN DETAIL F)

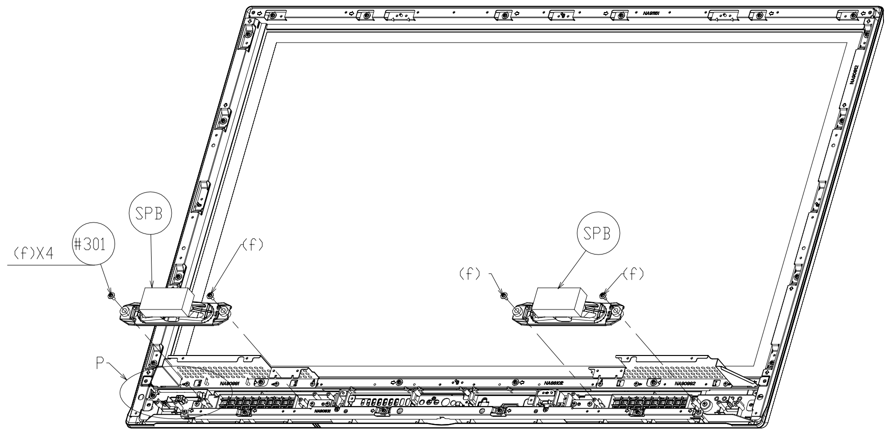

C 1:1
FILTER ASS'Y
#264 (c)*20
REFERENCE LINE OF (#130):STAMP OF FRAME
C
R
(c)
BEZEL F TOP ASS'Y
BEZEL F R ASS'Y
#130
#132
R (1:1)
BEZEL F L ASS'Y
D 1:1
BEZEL F BTM ASS'Y
S
D
#132
#130
S (1:1)
REFERENCE LINE OF (#130):STAMP OF FRAME

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#301	MJ04013	SCRW T2B_4*16
#303	MJ04067	SCRW M3D_4*10
#307	MF02363	EMI GASKETS
#311	MJ03568	SCRW T2D_4*16
SPB	GK01651	SPEAKER-04X15D

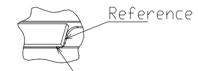
BEZEL ASS'Y-3



P
(1:2)


SPB
(f)X4
#301
(f)
SPB
(f)
(f)
P

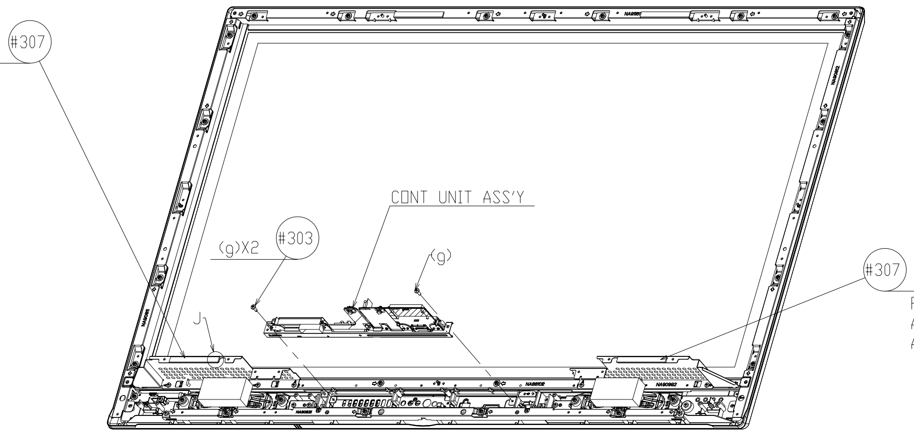
BEZEL ASS'Y-4


Reference
Reference

J
1:1

CAUTION

PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.49N(50gf)


#307
CONT UNIT ASS'Y
(g)X2
#303
(g)
J
#307

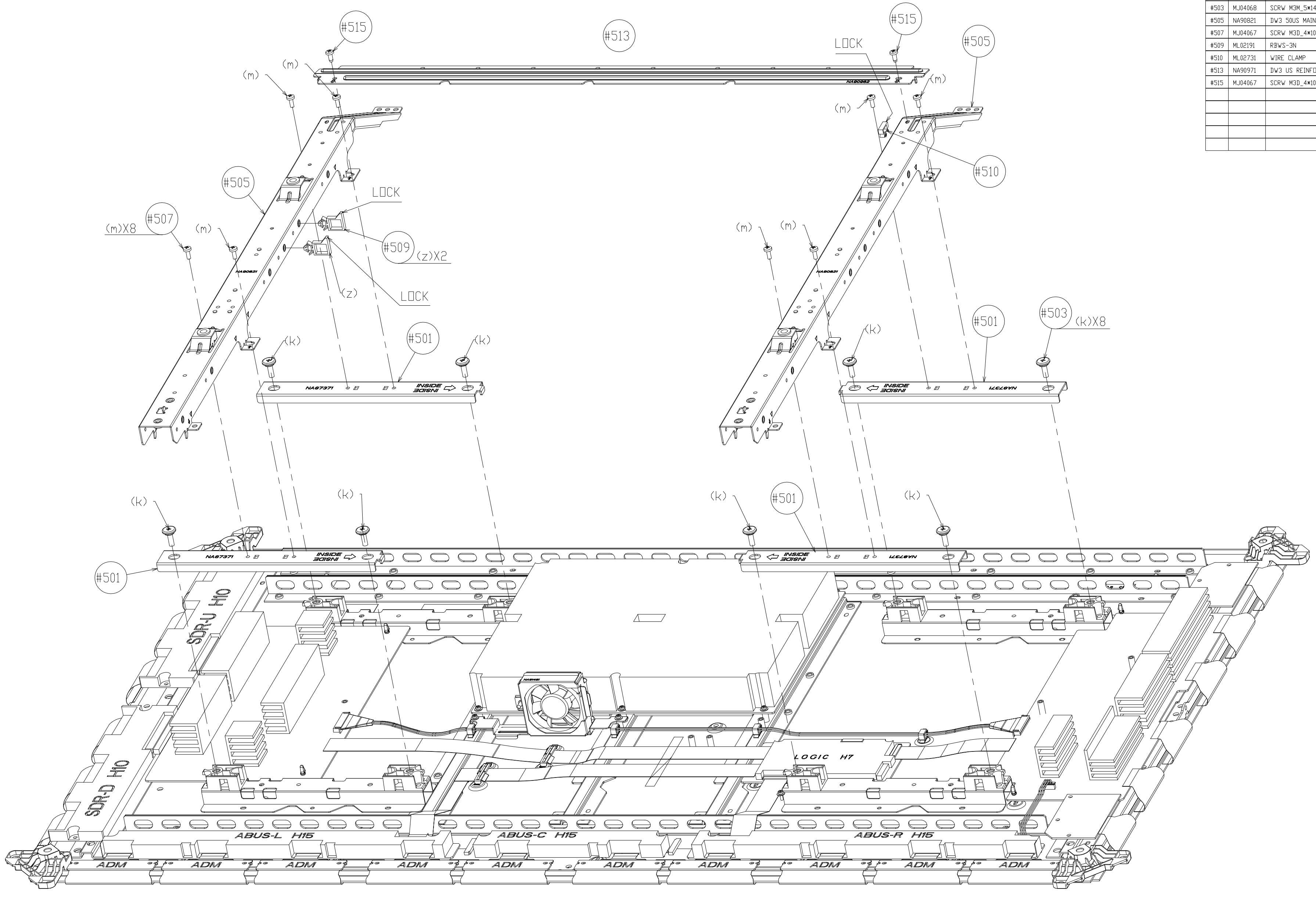
CAUTION

PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.49N(50gf)

FINAL ASSEMBLY GUIDE

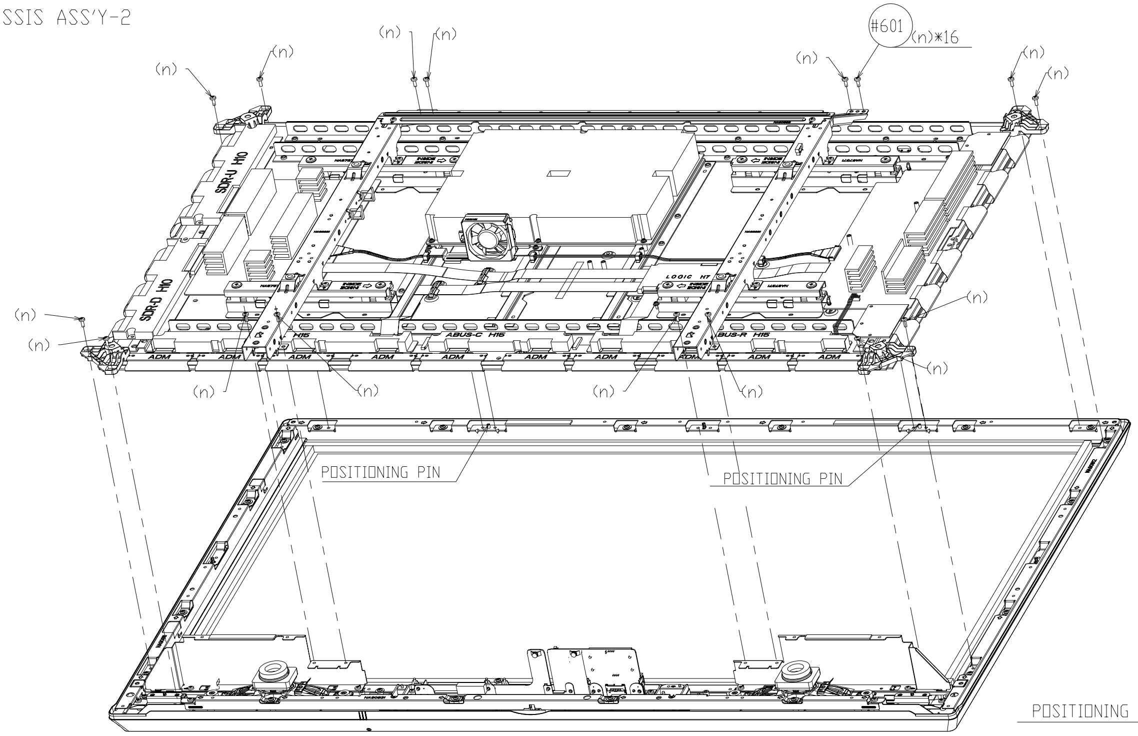
CHASSIS ASS'Y-1

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#501	NA87371	DW2 50 SUB FRAME
#503	MJ04068	SCRW M3M_5*14
#505	NA90821	DW3 50US MAIN FRAME
#507	MJ04067	SCRW M3D_4*10
#509	ML02191	RBWS-3N
#510	ML02731	WIRE CLAMP
#513	NA90971	DW3 US REINFORCE MTL
#515	MJ04067	SCRW M3D_4*10

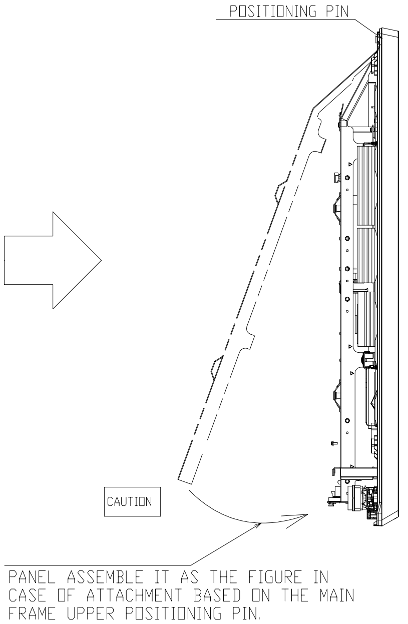

#515
#513
#515
LOCK
#505
(m)
(m)
(m)
(m)
#510
#505
LOCK
(m)X8
#507
(m)
#509
(z)X2
(z)
LOCK
(m)
(m)
#501
#503
(k)X8
(k)
(k)
#501
(k)
NA87371
INSIDE
(k)
(k)
(k)
(k)
#501
#501
SDR-U H10
SDR-D H10
LOGIC H7
ABUS-L H15
ABUS-C H15
ABUS-R H15
ADM

FINAL ASSEMBLY GUIDE

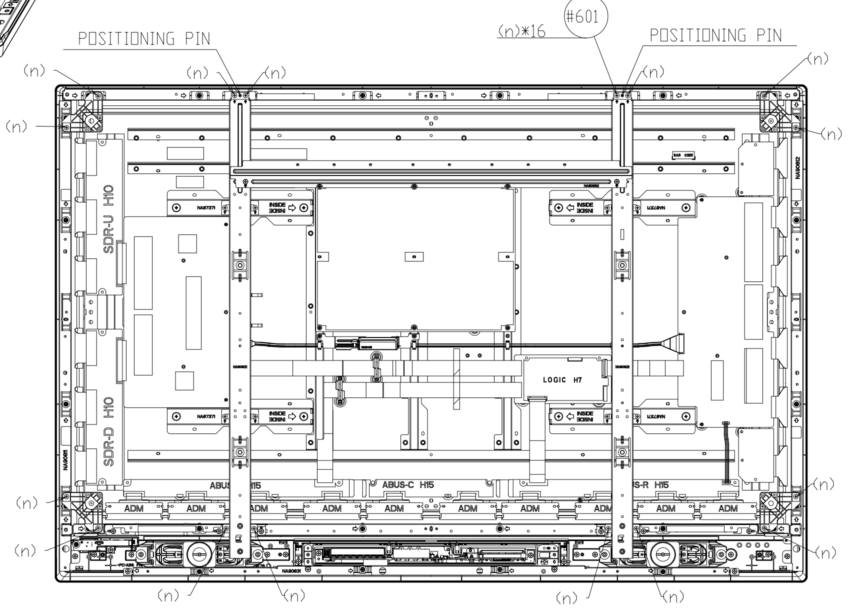
CHASSIS ASS'Y-2


#601
(n)*16
(n)
POSITIONING PIN
POSITIONING PIN
SDR-U H10
SDR-D H10
ABUS-C H15
ABUS-R H15
LOGIC H7
ADM

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#601	MJ04067	SCRW M3D_4*10BD+


POSITIONING PIN
CAUTION

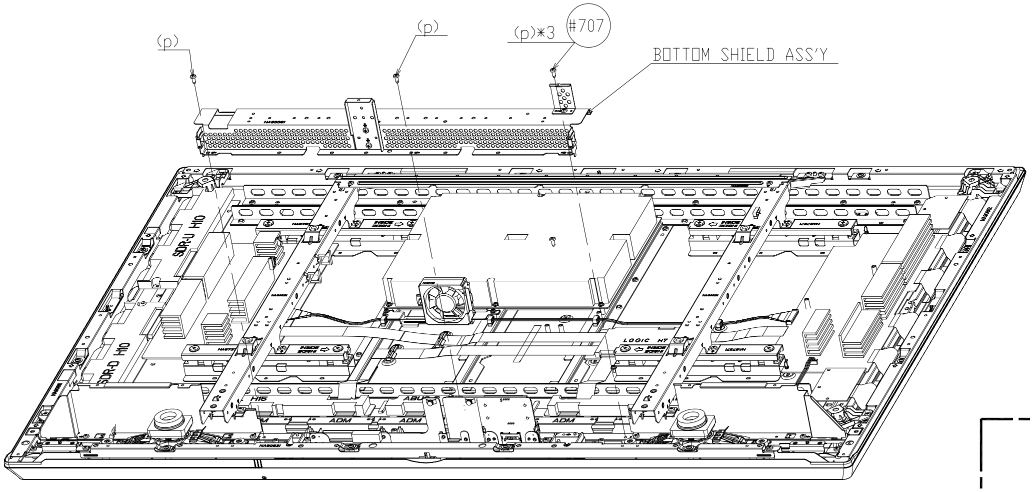
PANEL ASSEMBLE IT AS THE FIGURE IN CASE OF ATTACHMENT BASED ON THE MAIN FRAME UPPER POSITIONING PIN.


#601
(n)*16
POSITIONING PIN
POSITIONING PIN
(n)
SDR-U H10
SDR-D H10
LOGIC H7
ABUS-C H15
ADM

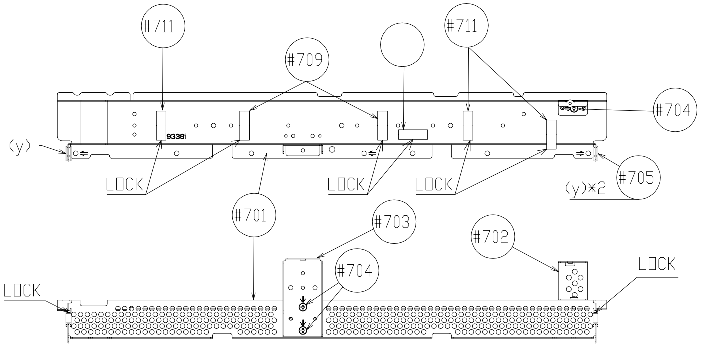
CHASSIS ASS'Y-2
(REAR VIEW)

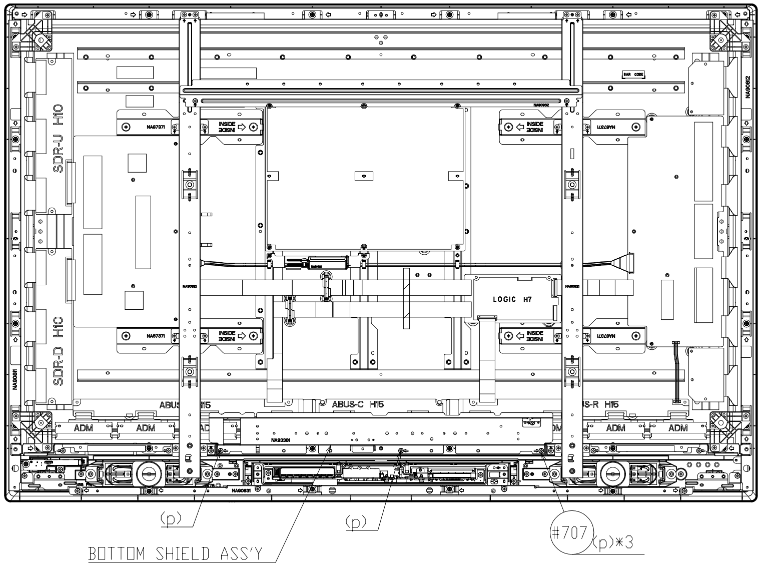
Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#701	NA93381	DW3 50US BTM SHIELD
#702	NA93351	DW3 50US BTM SUB MTL
#703	NA93371	DW3 50US R-FIX MTL
#704	MJ04067	SCRW M3D_4*10
#705	ML02063	EDG SADDLE 1010L
#707	MJ04067	SCRW M3D_4*10
#710	ML02731	WIRE CLAMP
#711	ML02731	WIRE CLAMP

CHASSIS ASS'Y-3


(p)
(p)
(p)*3
#707
BOTTOM SHIELD ASS'Y
SDR-U H10
SDR-D H10
LOGIC H7
ADM
ADM
ADM
ABUS

BOTTOM SHIELD ASS'Y


#711
#709
#711
#704
(y)
93381
LOCK
LOCK
LOCK
(y)*2
#705
#701
#703
#702
#704
LOCK
LOCK

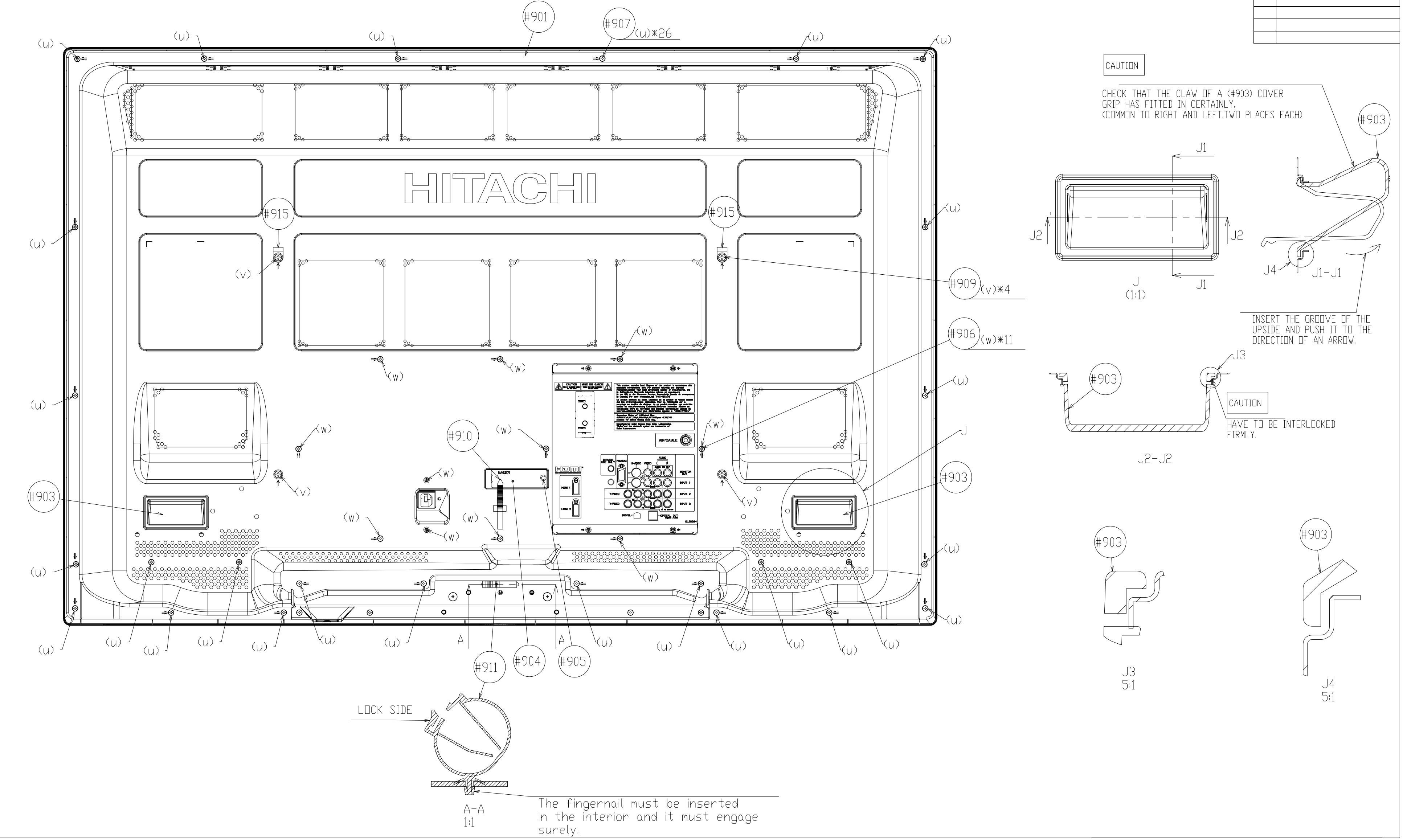

SDR-U H10
SDR-D H10
LOGIC H7
ABUS-C H15
S-R H15
ADM
ADM
ADM
ADM
(p)
(p)
#707
(p)*3
BOTTOM SHIELD ASS'Y

CHASSIS ASS'Y-3
(REAR VIEW)

FINAL ASSEMBLY GUIDE

BACK COVER ASS'Y

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#901	NA91161	DW3 50US FRAME TOP
#903	NA88102	DW3 50US FRAME BOTTOM
#905	MF02361	EMI GASKETS
#906	NA90811	DW3 50US BEZEL FRAME R
#907	NA90812	DW3 50US BEZEL FRAME L
#909	MF02362	EMI GASKETS
#910	MN30583	PANEL CUSHION 50 TB
#911	MN30584	PANEL CUSHION 50 LR


#901
#907
(u)*26
(u)
HITACHI
#915
#915
(v)
#909
(v)*4
#906
(w)*11
(w)
#910
#903
#903
AIR/CABLE
J
A
A
#911
#904
#905
LOCK SIDE
A-A
1:1
J1
J1
J2
J2
J
(1:1)
J4
J1-J1
#903
J3
#903
J2-J2
#903
#903
J3
5:1
J4
5:1

CAUTION

CHECK THAT THE CLAW OF A (#903) COVER GRIP HAS FITTED IN CERTAINLY.
(COMMON TO RIGHT AND LEFT.TWO PLACES EACH)

INSERT THE GROOVE OF THE UPSIDE AND PUSH IT TO THE DIRECTION OF AN ARROW.

CAUTION

HAVE TO BE INTERLOCKED FIRMLY.

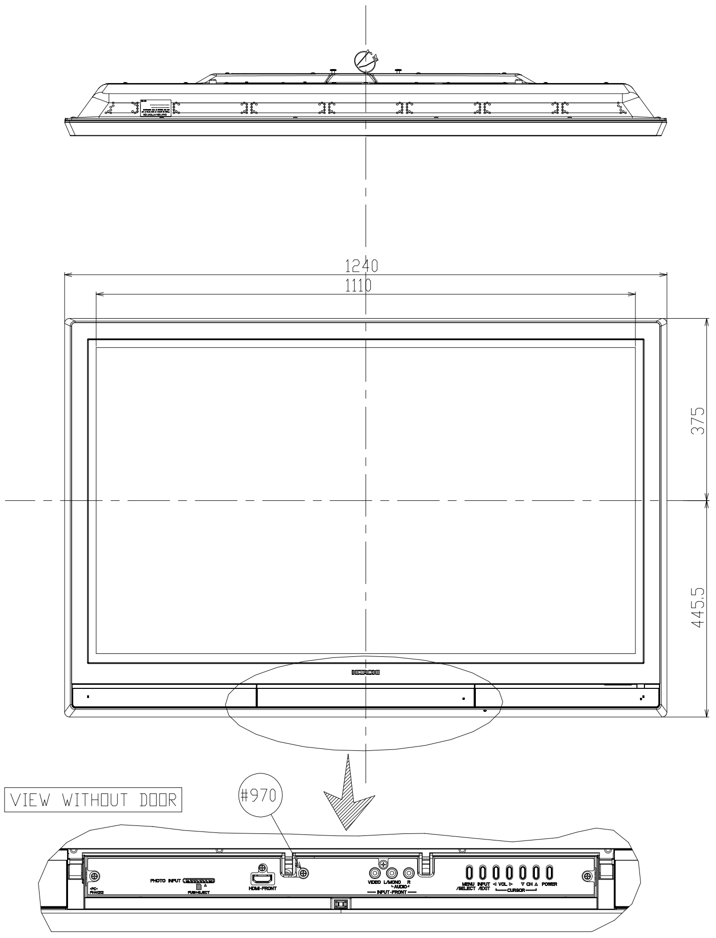
The fingernail must be inserted in the interior and it must engage surely.

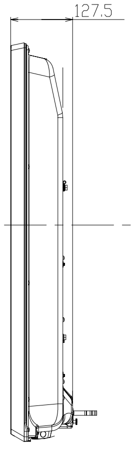
Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#970	MJ03649	SCRW M3D_3*10BD

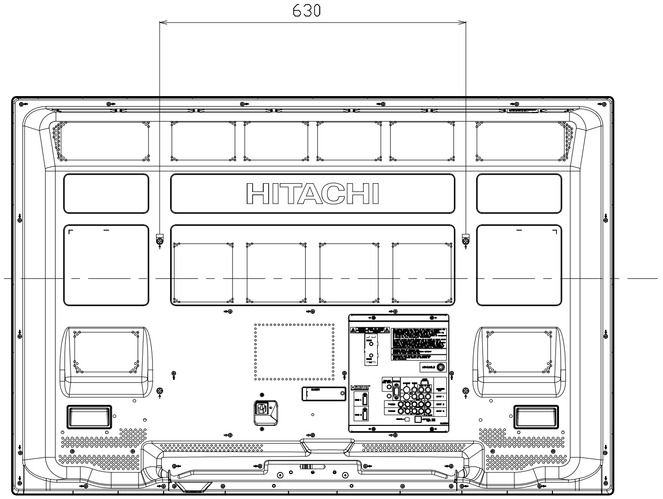
DRAWING OF OUTER SHAPE

Specifications

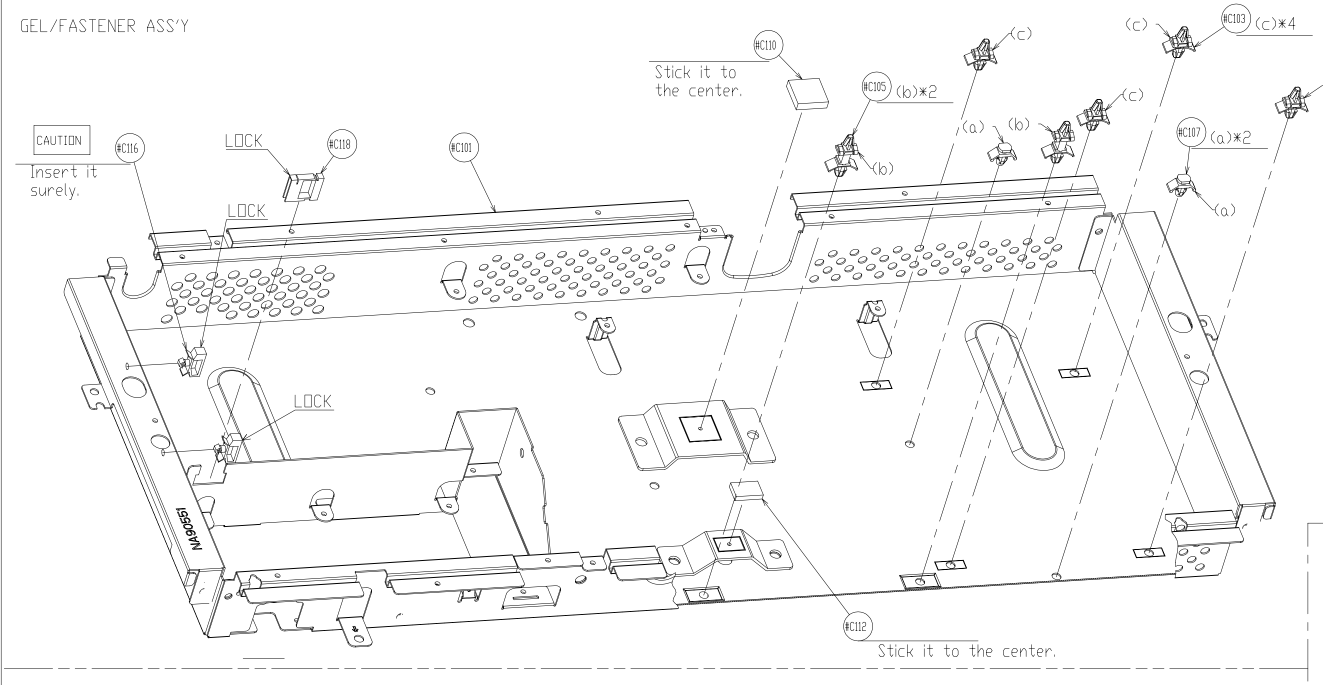
1. Wiring is refered to Wiring Diagram.
2. Plastics fasteners should be interlocked surely.
3. Unspecified screwing torque is as follows.
   Refer to W020359
4. While assembly, There should be no Finger Mark,Dust and so on, on the chassis metal.
5. Detail of assembly JOB is refered to work instruction issued
   by Production Engineering Section.
6. There should be no peel off after gasket was pasted.
   Adhesive strength: more than 0.49N(50gf)
7. Regarding the appearance quality, follow the specifications W600006.
8. There should be no Dust and so on, between (#0800) and PDP panel module.
9. Unless otherwise specified the Item no.# is common JOB.


1240
1110
375
445.5
VIEW WITHOUT DOOR
#970
PHOTO INPUT
PUSH/EJECT
HDMI-FRONT
VIDEO L/MONO R
AUDIO
INPUT-FRONT
MENU /SELECT
INPUT /EXIT
VOL
CH
POWER
CURSOR




630
HITACHI

FINAL ASSEMBLY GUIDE


GEL/FASTENER ASS'Y
CAUTION
Insert it surely.
#C116
LOCK
#C118
LOCK
LOCK
#C101
#C110
Stick it to the center.
#C105
(b)*2
(b)
(a)
(b)
(c)
(c)
(c)
#C103
(c)*4
(c)
(c)
#C107
(a)*2
(a)
NA90551
#C112
Stick it to the center.

Final Ass'y Parts

SYM.	P#	DESCRIPTION
#C101	NA90551	DW3 CHASSIS CASE
#C103	ML02411	FG SPACER 3S
#C105	ML02412	FG SPACER 8S
#C107	ML03811	PCB SUPPORT PS-3-01
#C110	MC01164	DW2 MAIN PWB GEL 4.5T
#C112	MC01167	DW3 SOUND GEL
#C116	ML02731	WIRE CLAMP
#C118	ML01081	WIRE CLAMP
#C119	MJ03467	SCRW M3E_3*8
#C120	NA90931	DW3 AC INLET BRAKET
#C122	NA90941	DW3 AC INLET CASE
#C124	MJ03467	SCRW M3E_3*8
#C127	MJ03467	SCRW M3E_3*8

Specifications

1.Regarding the wiring, refer to the wiring drawing(W151299).

2.Interlock firmly the plastics fasteners.

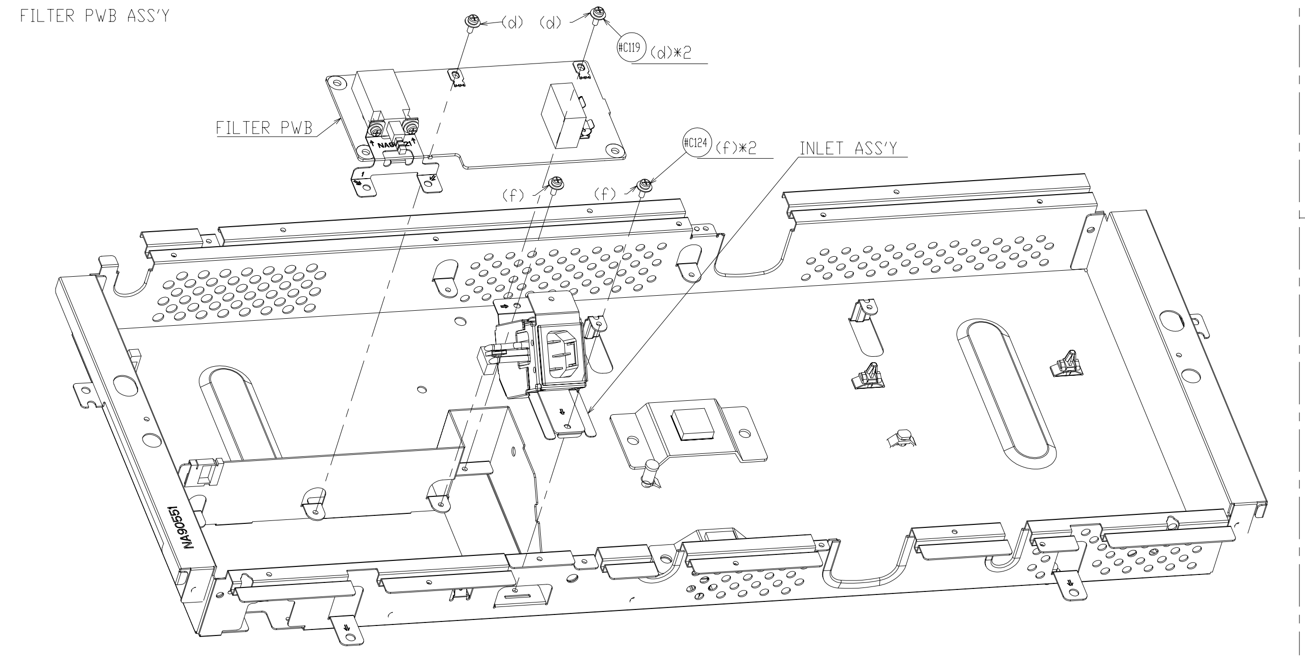
3.Unless otherwise specified, the screw fixing is as follows.
Screwing to a metal : Refer to the specification drawing (W020359).
Screwing to a plastics : Refer to the specification drawing (W045714).

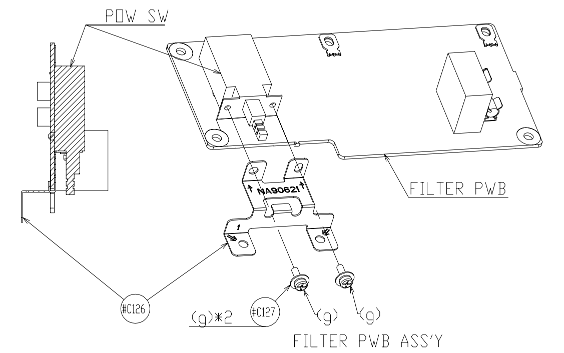
4.When assembling, do not stain the chassis and the product appearance surface with a fingerprint and so on.

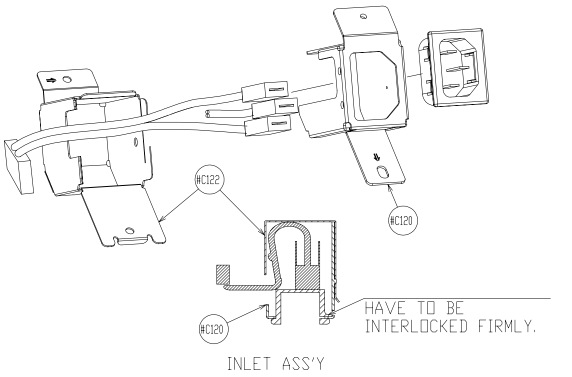
5.Asymbol number in a balloon that is not indicated a work code is applied to all works codes.

6.Detail of assembly JOB is referred to work instruction issued by Production Engineering Section.

7.The adhesion power of tape : More than 0.49N(50gf)


FILTER PWB ASS'Y
(d)
(d)
#C119
(d)*2
FILTER PWB
NA90621
#C124
(f)*2
(f)
(f)
INLET ASS'Y
NA90551

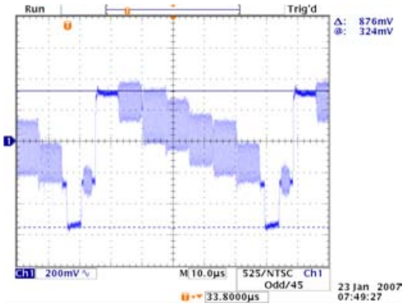

POW SW
NA90621
FILTER PWB
#C126
(g)*2
#C127
(g)
(g)
FILTER PWB ASS'Y


#C122
#C120
#C120
HAVE TO BE INTERLOCKED FIRMLY.
INLET ASS'Y

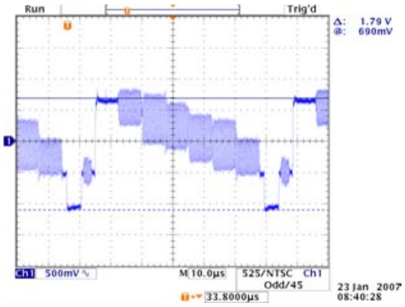
WAVEFORMS

Numbers inside circle correspond to locations shown in the circuit diagram. Waveforms taken using an NTSC Color Bar signal and a X10 probe. The amplitude of the waveform is shown as Δ.

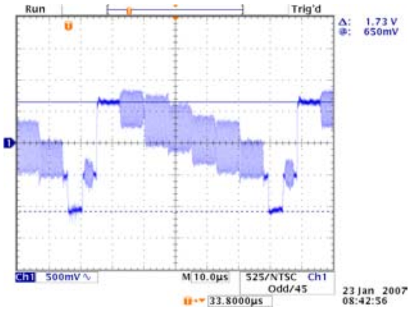
① UT01 Pin 13 TunerM_CV (out)



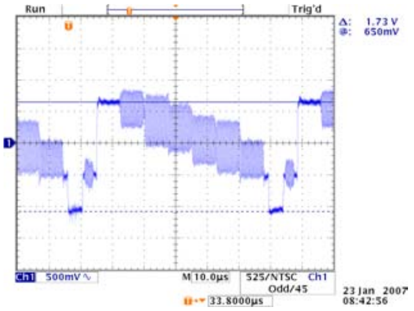
② JY02 Pin 4 Monitor-Out



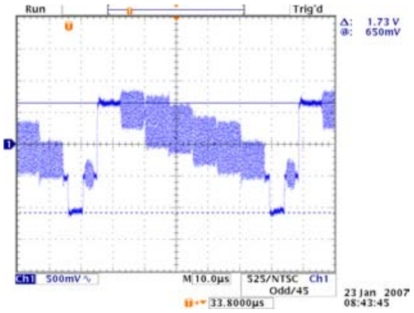
③ I001 Pin 26 TunerM_CV (in)



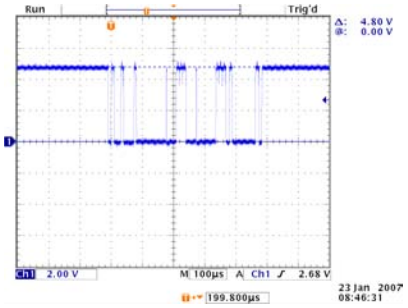
④ I001 Pin 28 MAIN_Y/V (out)



⑤ I001 Pin 32 SUB_Y/V (out)



⑥ I001 Pin 44 I^2C DATA



⑦ I001 Pin 45 I^2C CLK

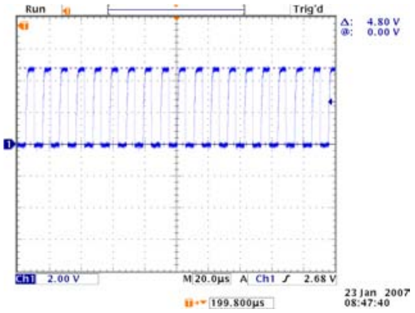


TABLE OF CONTENTS

DC VOLTAGES

(50" Models only)

Symbol	Pin No.	Voltage
CN64	1	65.7 V
	2	NC
	3	5.1 V
	4	GND
	5	GND
	6	GND
	7	NC
	8	(Vs) 86.8 V
	9	(Vs) 86.8 V
	10	(Vs) 86.8 V

Symbol	Pin No.	Voltage
CN68	1	5.1 V
	2	GND
	3	3.3 V
	4	GND
	5	NC
	6	NC
	7	2.7 V
	8	2.7 V
	9	NC

Symbol	Pin No.	Voltage
PFA1	1	7.8 V
	2	0
	3	GND

Symbol	Pin No.	Voltage
CNPPS	1	5.4 V
	2	5.4 V
	3	5.4 V
	4	GND
	5	GND
	6	GND
	7	10 V
	8	GND
	9	16 V
	10	GND
	11	GND
	12	GND
	13	10 V
	14	10 V
	15	10 V

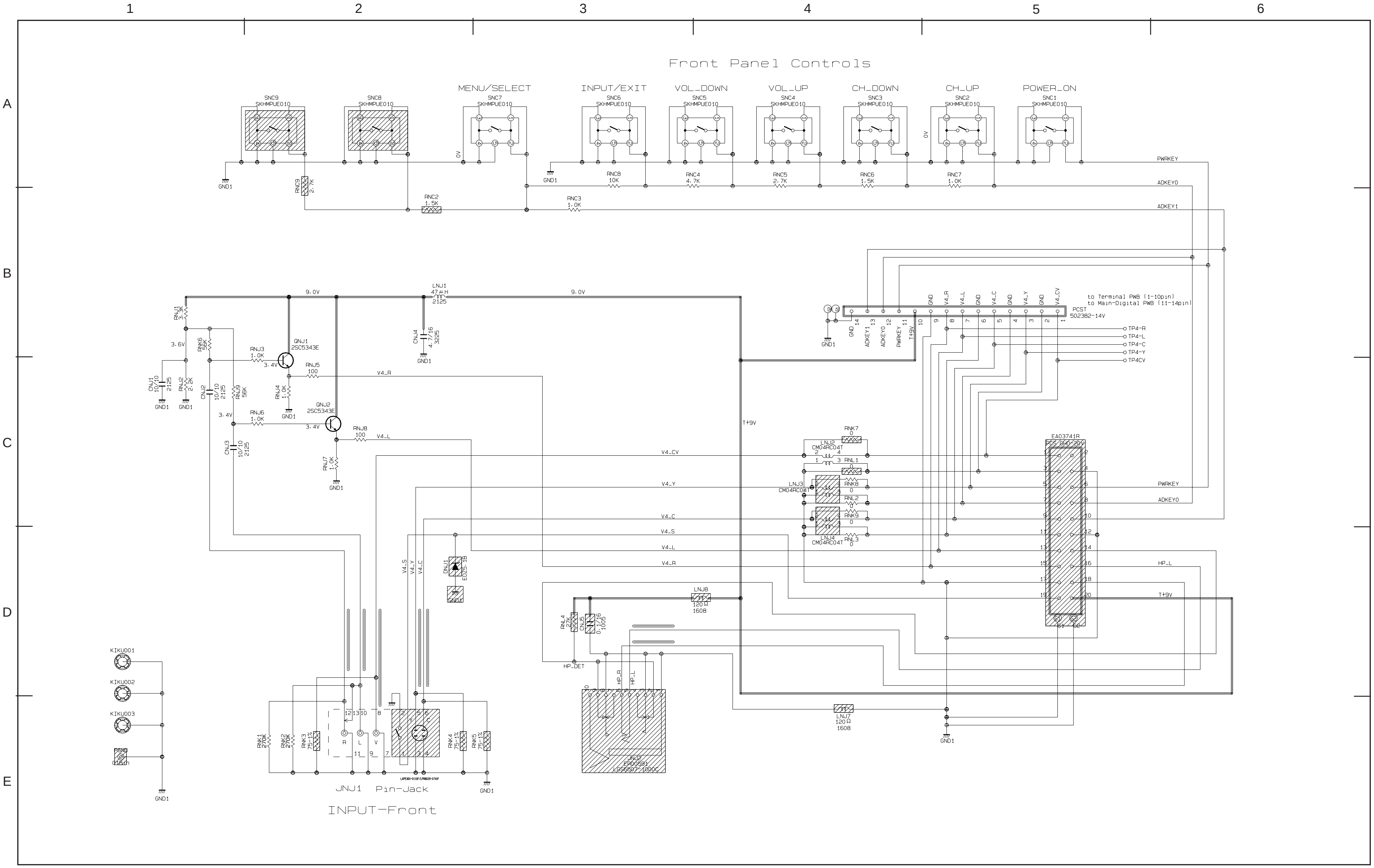
Symbol	Pin No.	Voltage
CN63	1	5 V
	2	GND
	3	3.3 V
	4	0
	5	-
	6	4.8 V
	7	3.1 V
	8	NC

Symbol	Pin No.	Voltage
PTC	1	-
	2	-
	3	-
	4	-
	5	-
	6	-
	7	-
	8	-
	9	-
	10	9.2 V

Symbol	Pin No.	Voltage
PSC	1	5.2 V
	2	5.2 V
	3	5.2 V
	4	GND

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

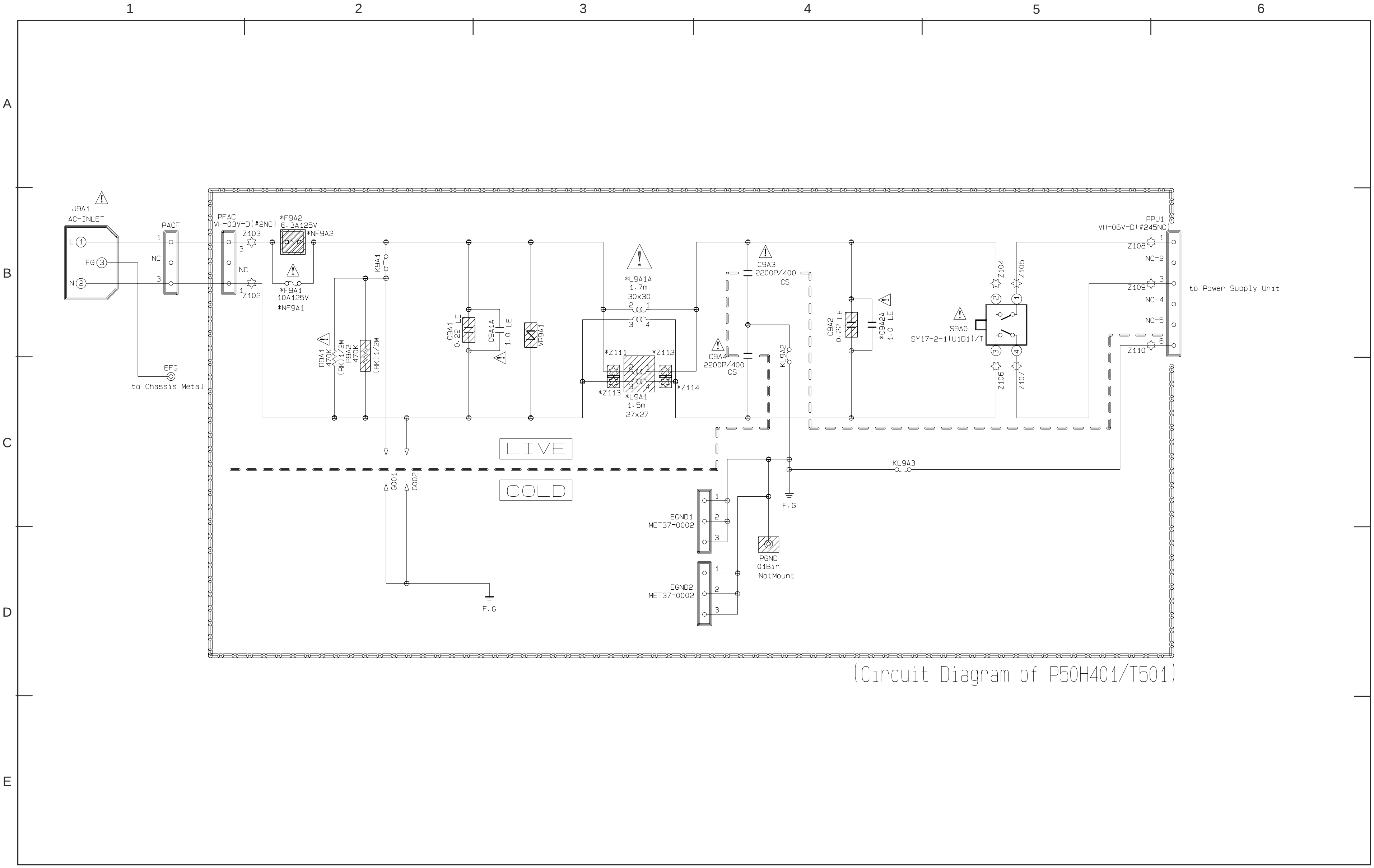

1
2
3
4
5
6
A
B
C
D
E
Front Panel Controls
SNC9 SKHMPUE010
SNC8 SKHMPUE010
MENU/SELECT SNC7 SKHMPUE010
INPUT/EXIT SNC6 SKHMPUE010
VOL_DOWN SNC5 SKHMPUE010
VOL_UP SNC4 SKHMPUE010
CH_DOWN SNC3 SKHMPUE010
CH_UP SNC2 SKHMPUE010
POWER_ON SNC1 SKHMPUE010
0V
GND1
RNC9 2.7K
RNC2 1.5K
RNC3 1.0K
RNC8 10K
RNC4 4.7K
RNC5 2.7K
RNC6 1.5K
RNC7 1.0K
PWRKEY
ADKEY0
ADKEY1
9.0V
LNJ1 47μH 2125
CNJ4 4.7/16 3225
RNJ1 3.3K
3.6V
RNK6 56K
RNJ3 1.0K
3.4V
QNJ1 2SC5343E
RNJ5 100
V4_R
CNJ1 10/10 2125
RNJ2 2.2K
CNJ2 10/10 2125
RNJ9 56K
RNJ4 1.0K
QNJ2 2SC5343E
RNJ6 1.0K
RNJ8 100
V4_L
CNJ3 10/10 2125
RNJ7 1.0K
T+9V
GND V4_R V4_L GND V4_C GND V4_Y GND V4_CV
to Terminal PWB (1-10pin)
to Main-Digital PWB (11-14pin)
PCST 502382-14V
GND 14 ADKEY1 13 ADKEY0 12 PWRKEY 11 T+9V 10 9 8 7 6 5 4 3 2 1
G2 G1
TP4-R
TP4-L
TP4-C
TP4-Y
TP4CV
V4_CV
V4_Y
V4_C
V4_S
V4_L
V4_R
RNK7 0
LNJ2 CM04RC04T
RNL1 0
LNJ3 CM04RC04T
RNK8 0
RNL2 0
RNK9 0
LNJ4 CM04RC04T
RNL3 0
EA03741R
PCS GHD-20V
HP_L
T+9V
DNJ1 EDZ5.1B
LNJ8 120Ω 1608
RNL4 27K
CNJ5 0.1/16 1005
HP_DET
HP_R
HP_L
JNJ2 ER00591 LGS6507-1000C
LNJ7 120Ω 1608
KIKU001
KIKU002
KIKU003
PGND 01Bih
RNK1 270K
RNK2 270K
RNK3 75-1%
R L V
Y C
RNK4 75-1%
RNK5 75-1%
LAP5300-0110F/LPR8029-07XXF
JNJ1 Pin-Jack
INPUT-Front

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

CONTROL

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
J9A1
AC-INLET
L 1
FG 3
N 2
PACF
1
NC
3
EFG
to Chassis Metal
PFAC
VH-03V-D(#2NC)
Z103
3
NC
1
Z102
*F9A2
6.3A125V
*NF9A2
*F9A1
10A125V
*NF9A1
K9A1
R9A1
470K
(RK)1/2W
R9A2
470K
(RK)1/2W
C9A1
0.22 LE
C9A1A
1.0 LE
VR9A1
*L9A1A
1.7m
30x30
2
1
3
4
*Z111
*Z112
*Z113
*Z114
*L9A1
1.5m
27x27
LIVE
COLD
G001
G002
F.G
C9A3
2200P/400
CS
C9A4
2200P/400
CS
KL9A2
C9A2
0.22 LE
*C9A2A
1.0 LE
S9A0
SY17-2-1(U1D1)/T
Z104
Z105
Z106
Z107
PPU1
VH-06V-D(#245NC)
Z108
1
NC-2
Z109
3
NC-4
NC-5
Z110
6
to Power Supply Unit
KL9A3
F.G
EGND1
MET37-0002
EGND2
MET37-0002
PGND
01Bin
NotMount

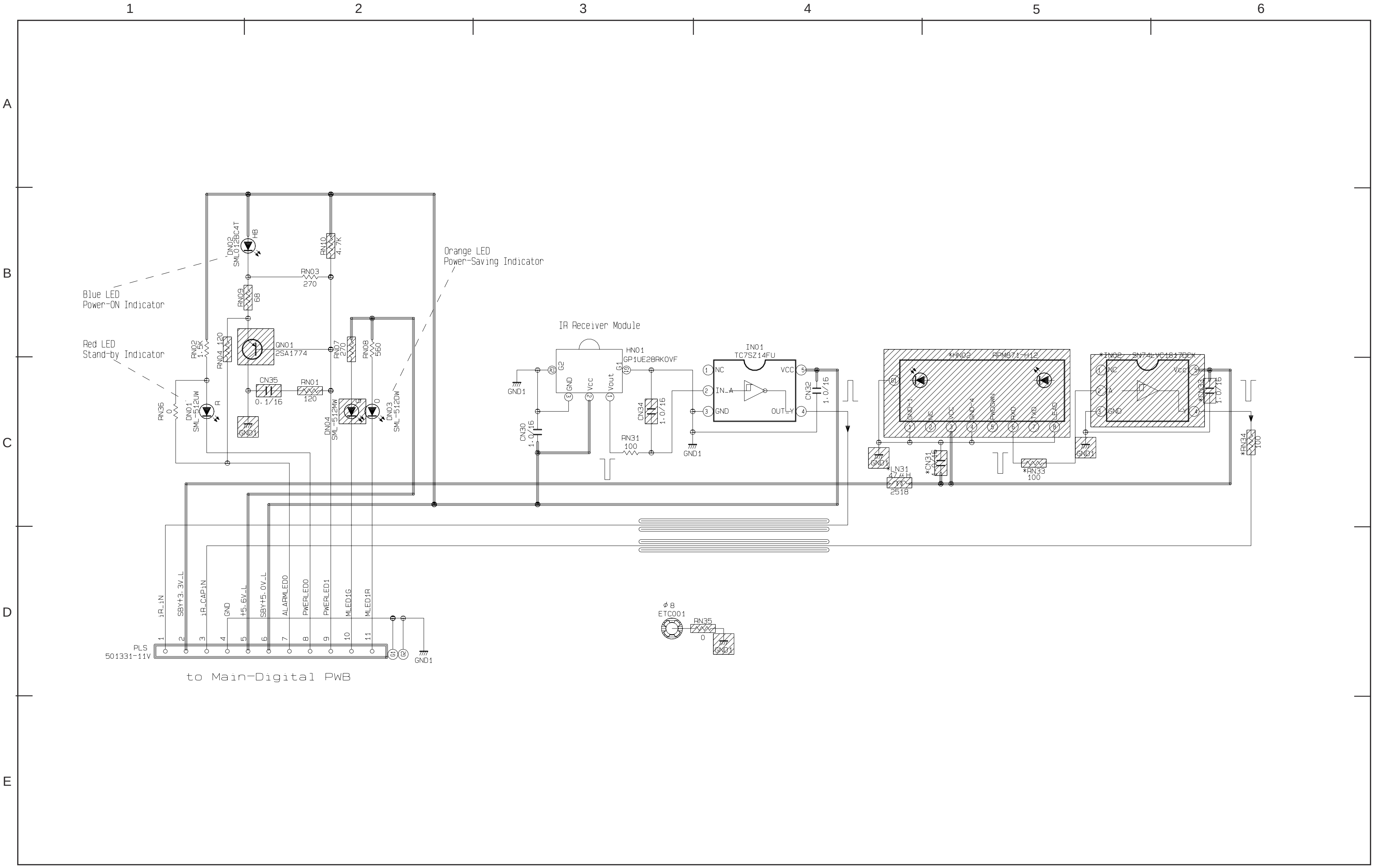
(Circuit Diagram of P50H401/T501)

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

FILTER

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

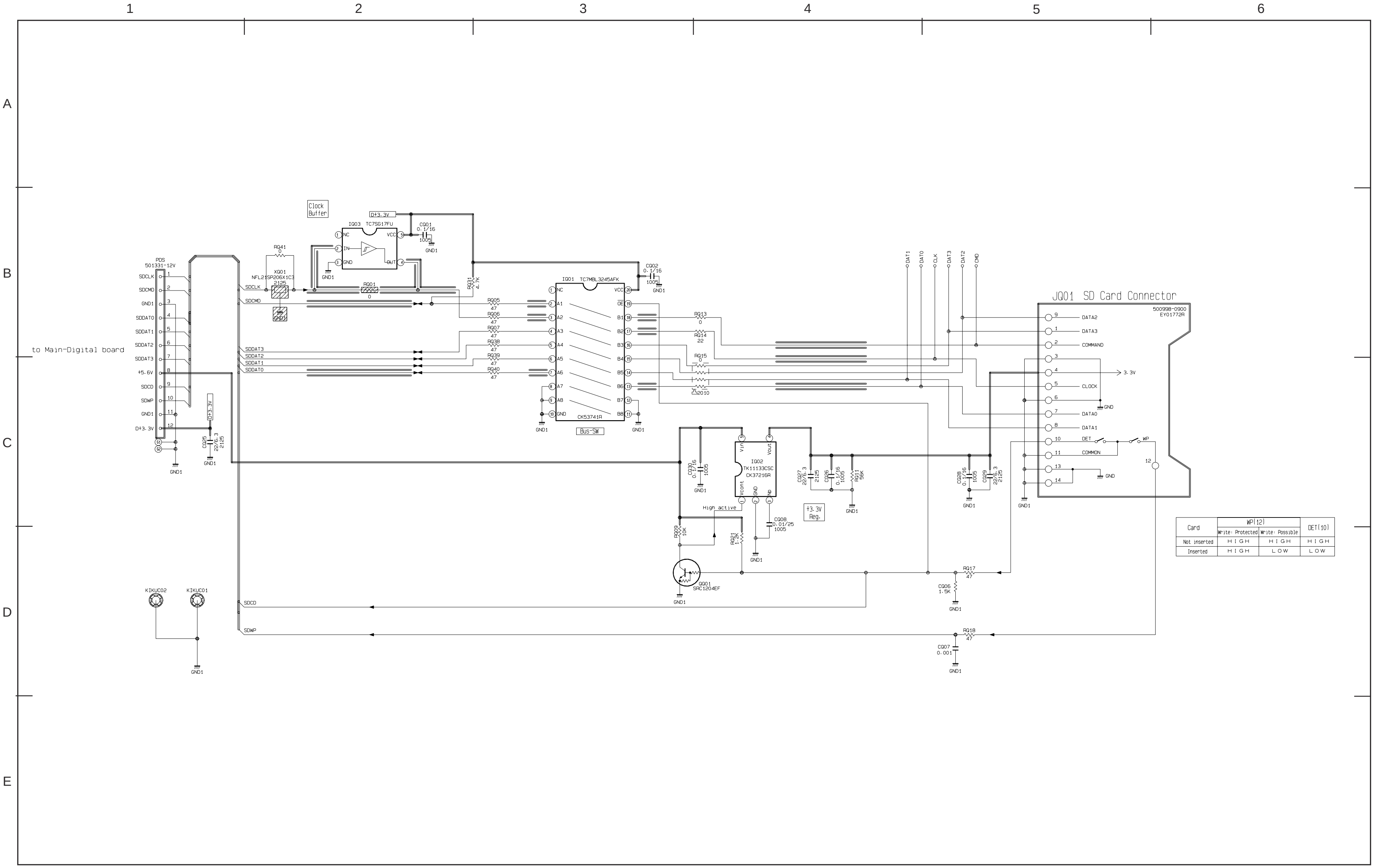

1
2
3
4
5
6
A
B
C
D
E
Blue LED
Power-ON Indicator
Red LED
Stand-by Indicator
Orange LED
Power-Saving Indicator
DN02
SML012BC4T
HB
RN10
4.7K
RN03
270
RN09
68
RN02
1.5K
RN04 120
QN01
2SA1774
RN07
270
RN08
560
CN35
0.1/16
RN01
120
RN36
0
DN01
SML-512UW
R
GND1
DN04
SML-512MW
G
O
DN03
SML-512DW
IR Receiver Module
HN01
GP1UE28RKOVF
G2
GND
Vcc
Vout
G1
GND1
CN30
1.0/16
CN34
1.0/16
RN31
100
IN01
TC7SZ14FU
NC
IN_A
GND
VCC
OUT_Y
CN32
1.0/16
*HN02 RPM871-H12
GND-1
NC
VCC
GND-4
PWDOWN
RXD
TXD
LEAD
*LN31
47μH
2518
*CN31
1.0/16
*RN33
100
*IN02 SN74LVC1G17DCK
NC
A
GND
Vcc
Y
*CN33
1.0/16
*RN34
100
iR_iN
SBY+3.3V_L
iR_CAPiN
GND
+5.6V_L
SBY+5.0V_L
ALARMLED0
PWERLED0
PWERLED1
MLED1G
MLED1R
1
2
3
4
5
6
7
8
9
10
11
PLS
501331-11V
G1
G2
GND1
to Main-Digital PWB
ϕ8
ETC001
RN35
0
GND1

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

LED

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
to Main-Digital board
PDS
501331-12V
SDCLK
SDCMD
GND1
SDDAT0
SDDAT1
SDDAT2
SDDAT3
+5.6V
SDCD
SDWP
GND1
D+3.3V
G1
G2
CQ25
22/6.3
2125
D+3.3V
Clock
Buffer
D+3.3V
IQ03 TC7SG17FU
NC
IN
GND
OUT
VCC
CQ01
0.1/16
1005
RQ41
0
XQ01
NFL21SP206X1C3
2125
RQ01
0
RQ31
4.7K
SDCLK
SDCMD
SDDAT3
SDDAT2
SDDAT1
SDDAT0
RQ05 47
RQ06 47
RQ07 47
RQ38 47
RQ39 47
RQ40 47
IQ01 TC7MBL3245AFK
CK53741R
Bus-SW
NC
A1
A2
A3
A4
A5
A6
A7
A8
GND
VCC
OE
B1
B2
B3
B4
B5
B6
B7
B8
CQ02
0.1/16
1005
RQ13 0
RQ14 22
RQ15 0
2010
DAT1
DAT0
CLK
DAT3
DAT2
CMD
JQ01 SD Card Connector
500998-0900
EY01772R
DATA2
DATA3
COMMAND
3.3V
CLOCK
GND
DATA0
DATA1
DET
WP
COMMON
GND
12
CQ30
0.1/16
1005
IQ02
TK11133CSC
CK37216R
Vin
Vout
Vcont
GND
Np
High active
CQ08
0.01/25
1005
+3.3V
Reg.
CQ27
22/6.3
2125
CQ26
0.1/16
1005
RQ11
56K
CQ28
0.1/16
1005
CQ29
22/6.3
2125
RQ09
10K
RQ21
1.2K
QQ01
SRC1204EF
RQ17
47
CQ06
1.5K
RQ18
47
CQ07
0.001
SDCD
SDWP
KIKUC02
KIKUC01
GND1

Card	WP(12)		DET(10)
	Write: Protected	Write: Possible	
Not inserted	HIGH	HIGH	HIGH
Inserted	HIGH	LOW	LOW

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

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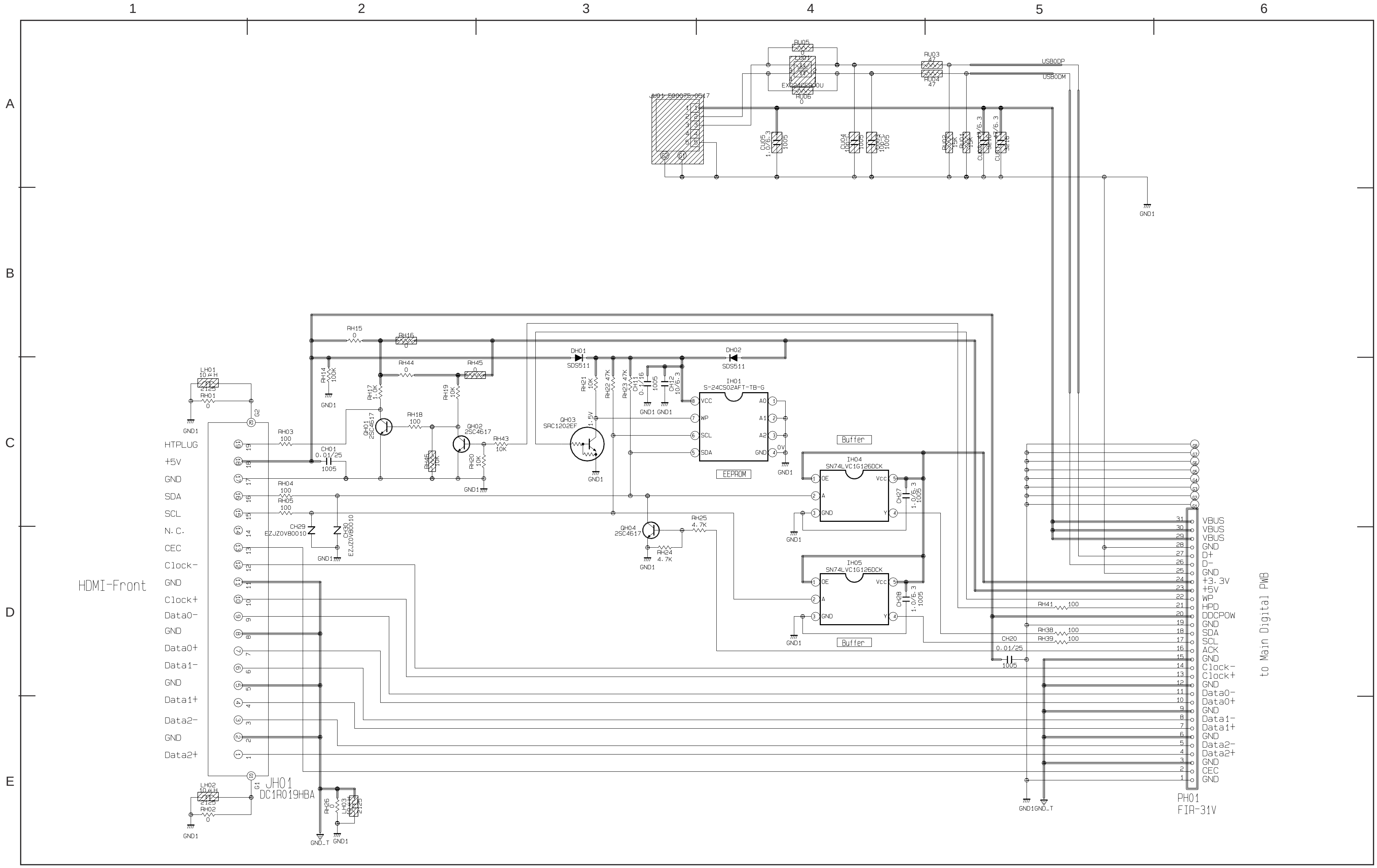
1
2
3
4
5
6
A
B
C
D
E
JU01 500075 0517
RU05
0
LU01
EXC24CE900U
RU06
0
RU03
47
RU04
47
USB0DP
USB0DM
CU05
1.0/6.3
1005
CU04
10p-C
1005
CU03
10p-C
1005
RU02
15K
RU01
15K
CU02 47/6.3
3216
CU01 47/6.3
3216
GND1
LH01
10μH
2125
RH01
0
RH15
0
RH16
0
RH44
0
RH45
0
RH14
100K
RH17
1.0K
RH19
10K
RH18
100
QH01
2SC4617
QH02
2SC4617
RH46
10K
RH20
10K
RH43
10K
RH03
100
CH01
0.01/25
1005
RH04
100
RH05
100
CH29
EZJZ0V80010
CH30
EZJZ0V80010
DH01
SDS511
DH02
SDS511
RH21
10K
RH22 47K
RH23 47K
CH11
0.1/16
1005
CH12
10/6.3
QH03
SRC1202EF
1.5V
IH01
S-24CS02AFT-TB-G
VCC
WP
SCL
SDA
A0
A1
A2
GND
0V
EEPROM
QH04
2SC4617
RH25
4.7K
RH24
4.7K
Buffer
IH04
SN74LVC1G126DCK
OE
A
GND
Vcc
Y
CH27
1.0/6.3
1005
IH05
SN74LVC1G126DCK
CH28
1.0/6.3
1005
Buffer
HTPLUG
+5V
GND
SDA
SCL
N.C.
CEC
Clock-
GND
Clock+
Data0-
GND
Data0+
Data1-
GND
Data1+
Data2-
GND
Data2+
HDMI-Front
JH01
DC1R019HBA
LH02
10μH
2125
RH02
0
RH26
0
LH03
10μH
2125
GND_T
RH41 100
RH38 100
RH39 100
CH20
0.01/25
1005
31 VBUS
30 VBUS
29 VBUS
28 GND
27 D+
26 D-
25 GND
24 +3.3V
23 +5V
22 WP
21 HPD
20 DDCPOW
19 GND
18 SDA
17 SCL
16 ACK
15 GND
14 Clock-
13 Clock+
12 GND
11 Data0-
10 Data0+
9 GND
8 Data1-
7 Data1+
6 GND
5 Data2-
4 Data2+
3 GND
2 CEC
1 GND
PH01
FIR-31V
to Main Digital PWB

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

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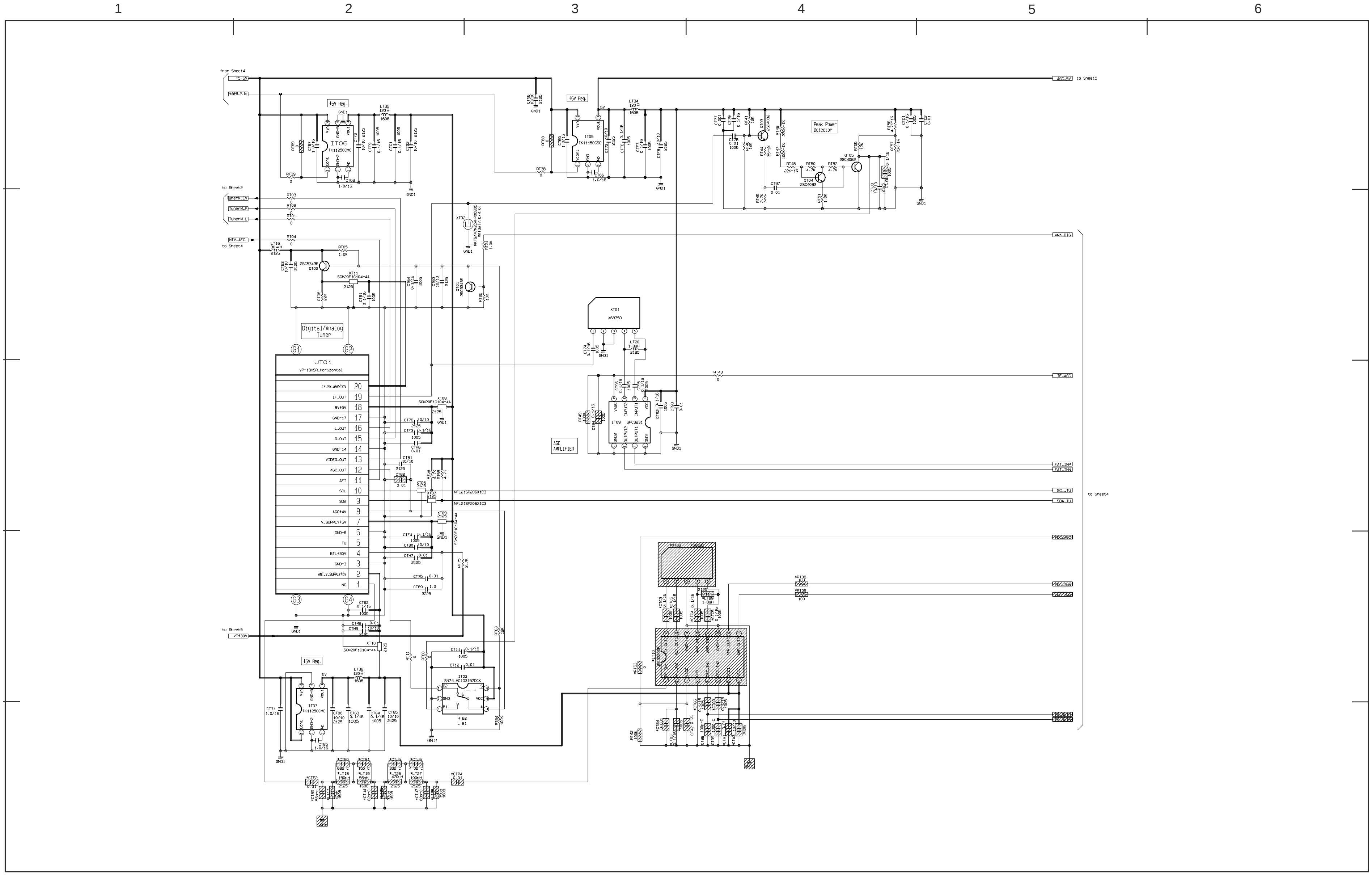
1
2
3
4
5
6
A
B
C
D
E
from Sheet4
+5V Reg.
IT06
TK11250CMC
IT05
TK11150CSC
Peak Power Detector
AGC_5V
to Sheet5
to Sheet2
to Sheet4
ANA_DIG
Digital/Analog Tuner
UT01
VP-13HSR,Horizontal
IF_SW45V/DDV
IF_OUT
BV+5V
L_OUT
R_OUT
VIDEO_OUT
AGC_OUT
AFT
SCL
SDA
AGC+4V
V_SUPPLY+5V
TU
BTL+30V
NC
XT01
X6875D
IF_AGC
AGC AMPLIFIER
IT09
uPC3231
FAT_INP
FAT_INN
SCL_TU
SDA_TU
IT03
SN74LVC1G3157DCK
IT07
TK11250CMC
to Sheet5
VT+30V
GND1

TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
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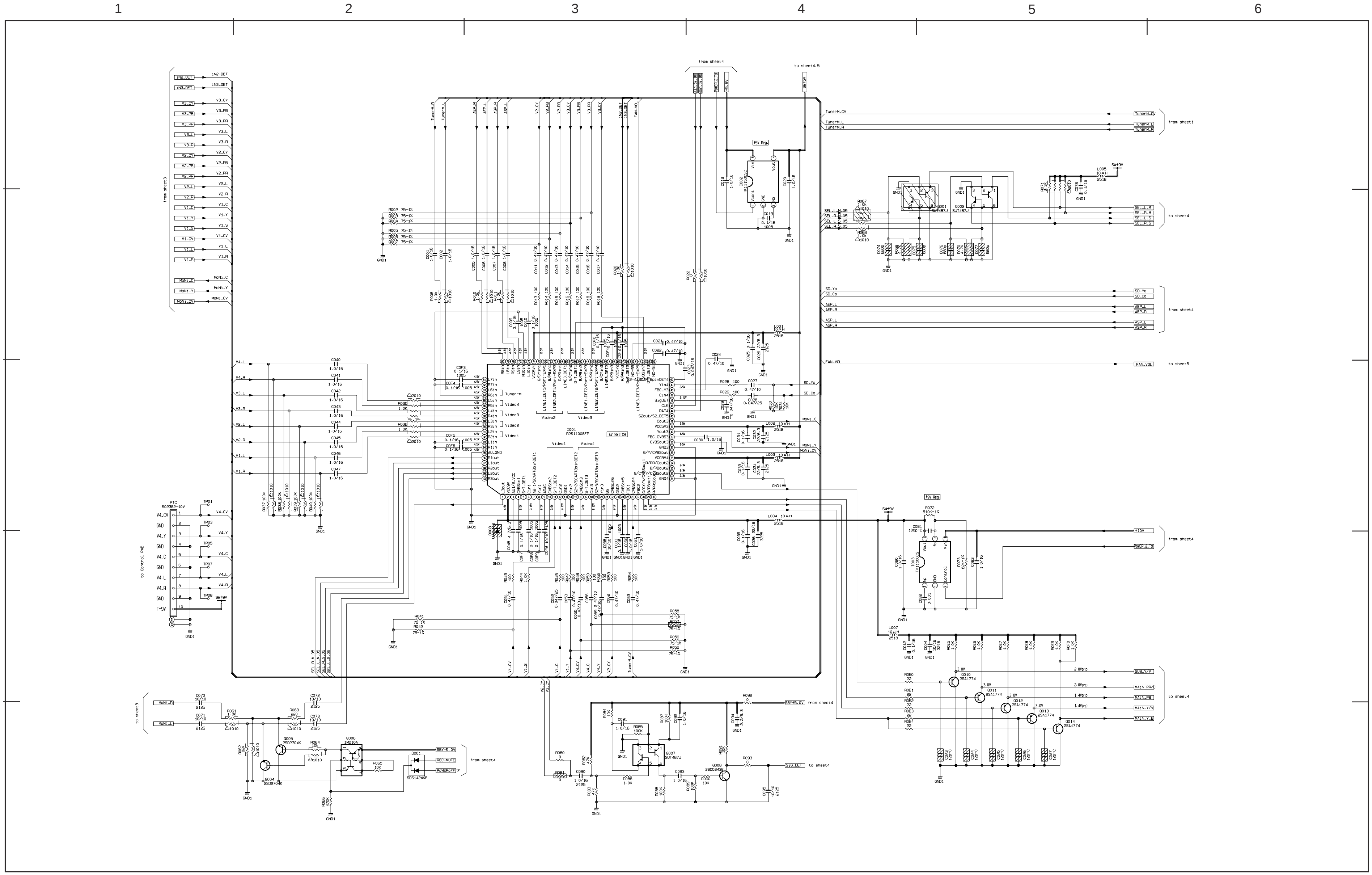
1
2
3
4
5
6
A
B
C
D
E
from sheet3
from sheet4
to sheet4-5
from sheet1
to sheet4
to sheet5
to Control PWB
IC01
R2S11008FP
AV SWITCH
5V Reg
9V Reg
GND1

TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
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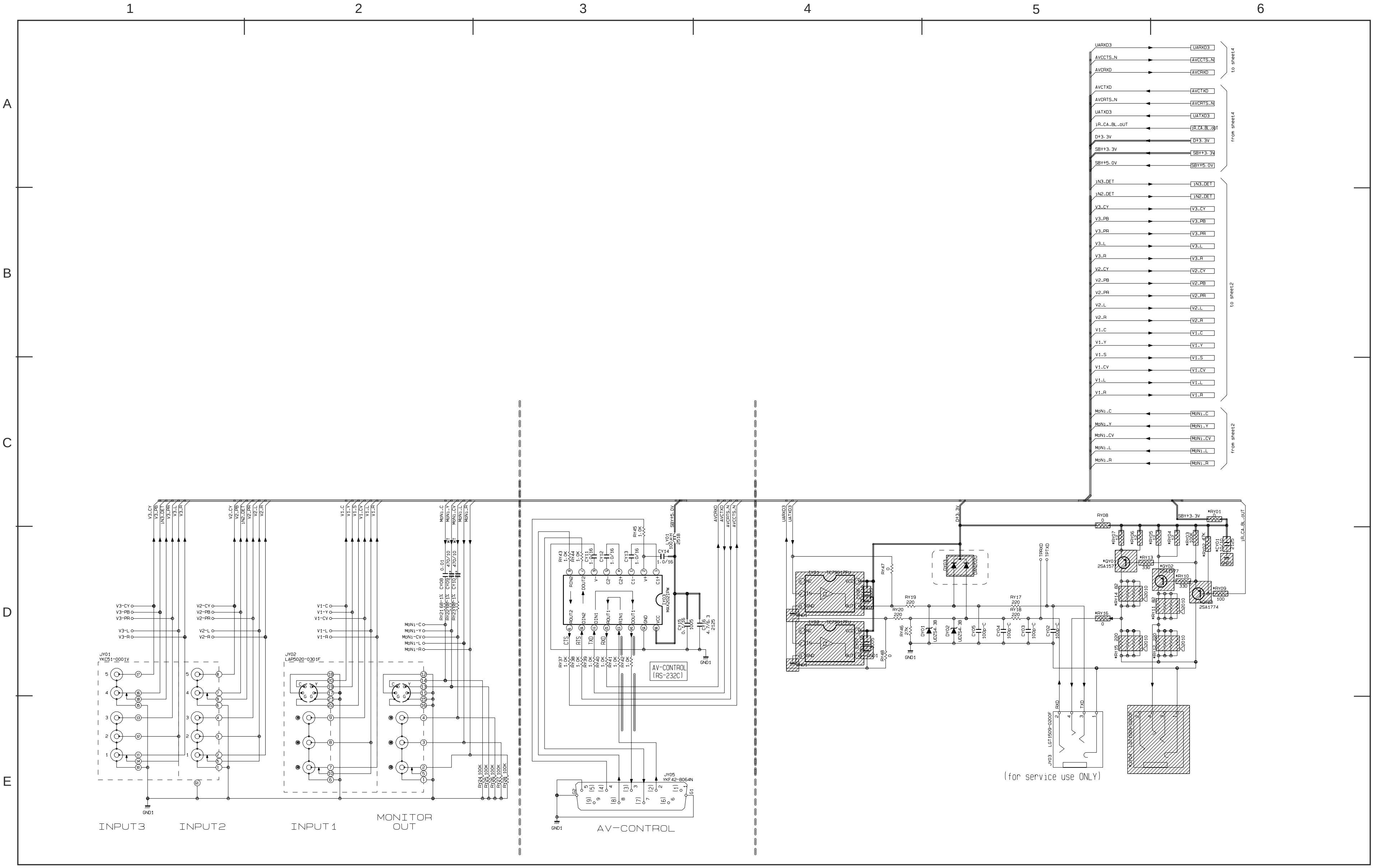
1
2
3
4
5
6
A
B
C
D
E
UARXD3
AVCCTS_N
AVCRXD
to sheet4
AVCTXD
AVCRTS_N
UATXD3
IR_CA_BL_OUT
D+3.3V
SBY+3.3V
SBY+5.0V
from sheet4
IN3_DET
IN2_DET
V3_CY
V3_PB
V3_PR
V3_L
V3_R
V2_CY
V2_PB
V2_PR
V2_L
V2_R
V1_C
V1_Y
V1_S
V1_CV
V1_L
V1_R
to sheet2
MON1_C
MON1_Y
MON1_CV
MON1_L
MON1_R
from sheet2
JY01
YKC51-0001V
JY02
LAP5020-0301F
IY02
MAX3232
AV-CONTROL
(RS-232C)
JY05
YKF42-8064N
GND1
INPUT3
INPUT2
INPUT1
MONITOR
OUT
AV-CONTROL
2SA1577
2SA1774
JY03
LGT1509-0200F
RXD
TXD
(for service use ONLY)

TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

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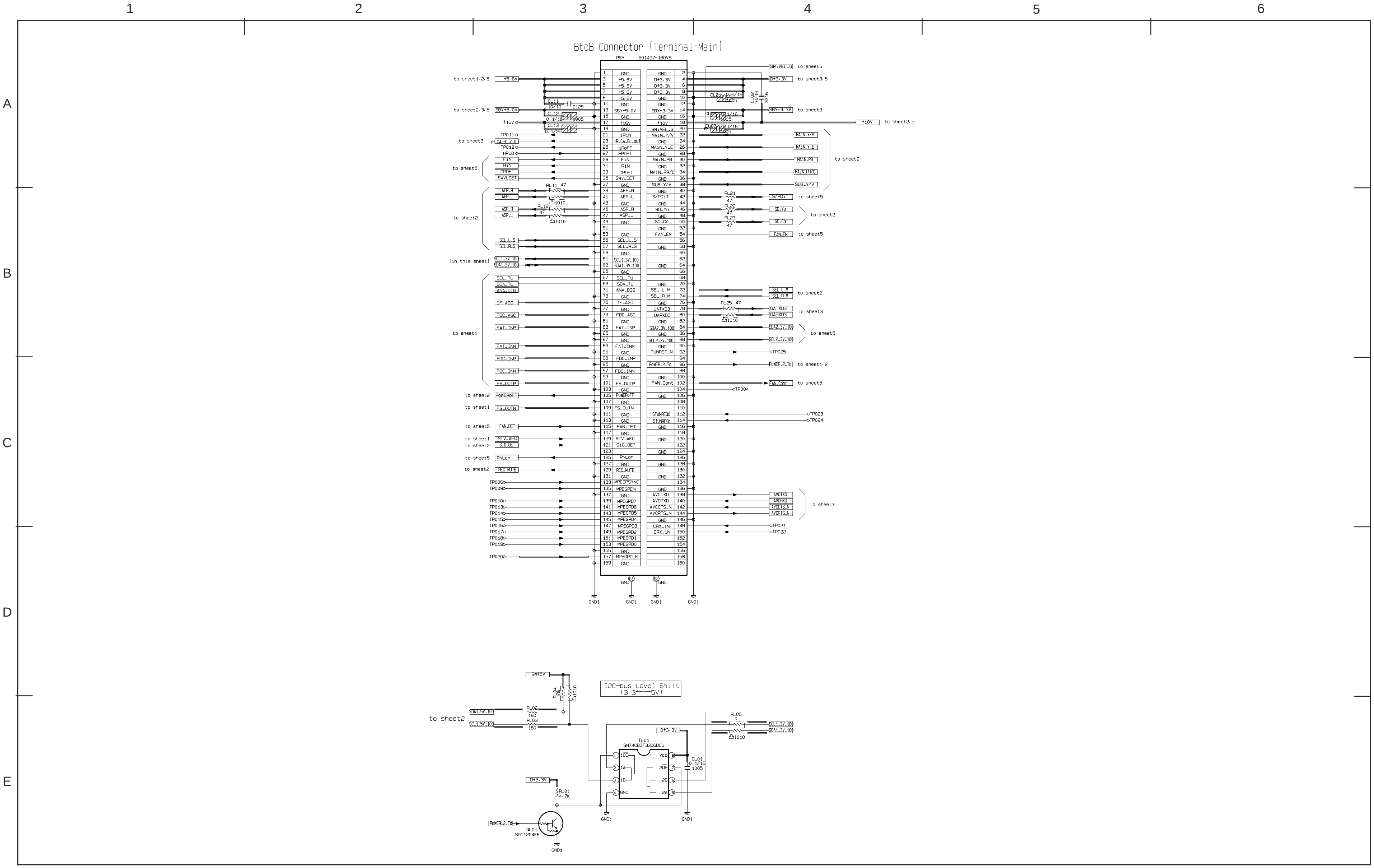
1
2
3
4
5
6
A
B
C
D
E
BtoB Connector (Terminal-Main)
PSM 501497-160VS
to sheet1・2・5 +5.6V
to sheet2・3・5 SBY+5.0V
+16V
CL11 10/10 2125
CL12 0.1/16 1005
CL13 0.1/25
TP011
to sheet3 iR_CA_BL_oUT
TP012
HP_D
to sheet5 FiN RiN CPDET SWVLDET
RL11 47
RL12 47
1010
to sheet2 AEP_R AEP_L ASP_R ASP_L SEL_L_S SEL_R_S
(in this sheet) SCL1_3V_100 SDA1_3V_100
to sheet1 SCL_TU SDA_TU ANA_DIG IF_AGC FDC_AGC FAT_INP FAT_INN FDC_INP FDC_INN FS_OUTP
to sheet2 PoWERoFF
to sheet1 FS_OUTN
to sheet5 FAN_DET
to sheet1 MTV_AFC
to sheet2 SiG_DET
to sheet5 PNLon
to sheet2 REC_MUTE
TP006 TP009 TP010 TP013 TP014 TP015 TP016 TP017 TP018 TP019 TP020
1 GND 3 +5.6V 5 +5.6V 7 +5.6V 9 +5.6V 11 GND 13 SBY+5.0V 15 GND 17 +16V 19 GND
21 iRiN 23 iR_CA_BL_oUT 25 iRoFF 27 HPDET 29 FiN 31 RiN 33 CPDET 35 SWVLDET 37 GND 39 AEP_R
41 AEP_L 43 GND 45 ASP_R 47 ASP_L 49 GND 51 53 GND 55 SEL_L_S 57 SEL_R_S 59 GND
61 SCL1_3V_100 63 SDA1_3V_100 65 GND 67 SCL_TU 69 SDA_TU 71 ANA_DIG 73 GND 75 IF_AGC 77 GND 79 FDC_AGC
81 GND 83 FAT_INP 85 GND 87 GND 89 FAT_INN 91 GND 93 FDC_INP 95 GND 97 FDC_INN 99 GND
101 FS_OUTP 103 GND 105 PoWERoFF 107 GND 109 FS_OUTN 111 GND 113 GND 115 FAN_DET 117 GND 119 MTV_AFC
121 SiG_DET 123 125 PNLon 127 GND 129 REC_MUTE 131 GND 133 MPEGPSYNC 135 MPEGPEN 137 GND 139 MPEGPD7
141 MPEGPD6 143 MPEGPD5 145 MPEGPD4 147 MPEGPD3 149 MPEGPD2 151 MPEGPD1 153 MPEGPD0 155 GND 157 MPEGPCLK 159 GND
GND 2 D+3.3V 4 D+3.3V 6 D+3.3V 8 GND 10 GND 12 SBY+3.3V 14 GND 16 +10V 18 SWiVEL_G 20
MAiN_Y/V 22 GND 24 MAiN_Y_E 26 GND 28 MAiN_PB 30 GND 32 MAiN_PR/C 34 GND 36 SUB_Y/V 38 GND 40
S/PDiT 42 GND 44 SD_Yo 46 GND 48 SD_Co 50 GND 52 FAN_EN 54 56 GND 58 60
62 GND 64 66 68 GND 70 SEL_L_M 72 SEL_R_M 74 GND 76 UATXD3 78 UARXD3 80
GND 82 SDA2_3V_100 84 GND 86 SCL2_3V_100 88 GND 90 TUNRST_N 92 94 PoWER_2_Td 96 98 GND 100
FAN_Cont 102 104 GND 106 108 110 STUNREQ0 112 STUNREQ1 114 GND 116 118 GND 120
122 GND 124 126 GND 128 130 GND 132 134 GND 136 AVCTXD 138 AVCRXD 140
AVCCTS_N 142 AVCRTS_N 144 GND 146 CRX_iN 148 DRX_iN 150 152 154 156 158 160
G1 GND
G2 GND
GND1
SWiVEL_G to sheet5
D+3.3V to sheet3・5
CL21 0.1/16 1005
CL22 0.1/16 1005
CL23 0.1/16 1005
CL02 10/16 3216
SBY+3.3V to sheet3
+10V to sheet2・5
MAiN_Y/V MAiN_Y_E MAiN_PB MAiN_PR/C SUB_Y/V to sheet2
RL21 47
RL22 47
RL23 47
S/PDiT to sheet5
SD_Yo SD_Co to sheet2
FAN_EN to sheet5
SEL_L_M SEL_R_M to sheet2
RL25 47
1010
UATXD3 UARXD3 to sheet3
SDA2_3V_100 SCL2_3V_100 to sheet5
TP025
PoWER_2_Td to sheet1・2
FAN_Cont to sheet5
TP004
TP023
TP024
AVCTXD AVCRXD AVCCTS_N AVCRTS_N to sheet3
TP021
TP022
SW+5V
RL04 10k
1010
I2C-bus Level Shift (3.3←→5V)
to sheet2 SDA1_5V_100 SCL1_5V_100
RL02 180
RL03 180
RL05 0
1010
SCL1_3V_100 SDA1_3V_100
D+3.3V
IL01 SN74CB3T3306DCU
1 1OE 2 1A 3 1B 4 GND
8 Vcc 7 2OE 6 2B 5 2A
CL01 0.1/16 1005
D+3.3V
RL01 4.7K
PoWER_2_Td
QL01 SRC1204EF
GND1

TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
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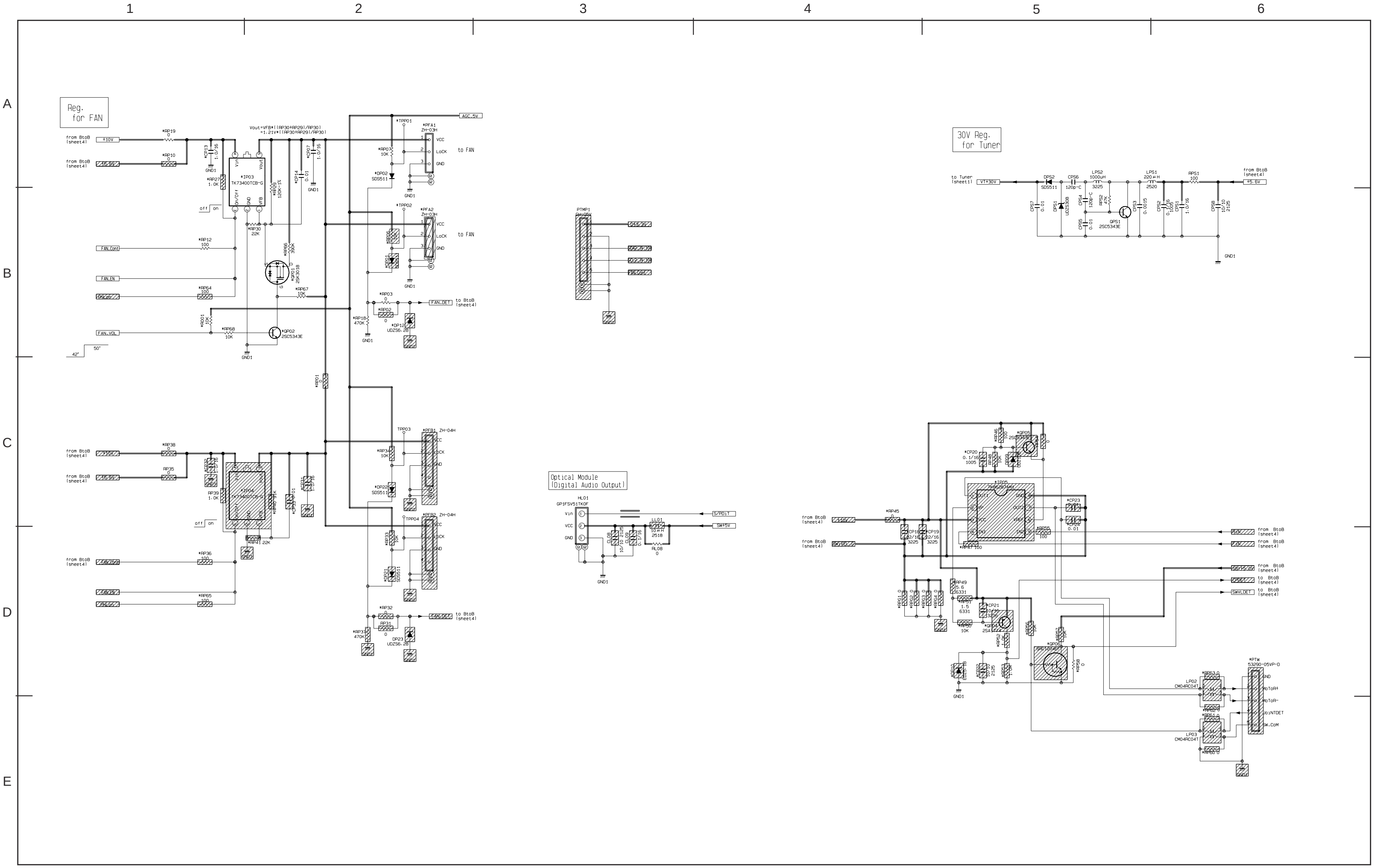
1
2
3
4
5
6
A
B
C
D
E
Reg. for FAN
from BtoB (sheet4)
+10V
*RP19 0
*RP10 0
*CP13 1.0/16
GND1
*RP27 1.0K
*IP03 TK73400TCB-G
Vout=VFB*((RP30+RP29)/RP30) =1.21V*((RP30+RP29)/RP30)
*CP14 0.01
*CP07 1.0/16
*TPP01
*PFA1 ZH-03H
VCC
LOCK
GND
to FAN
AGC.5V
*RP07 10K
*DP02 SDS511
*TPP02
*PFA2 ZH-03H
off on
*RP30 22K
*RP12 100
FAN.Cont
FAN.EN
*RP64 100
*QP01 2SK3018
*RP67 10K
*RP03 0
FAN.DET
to BtoB (sheet4)
*RP18 470K
*RP02 0
*DP12 UDZS6.2B
FAN.VOL
*RP68 10K
*QP02 2SC5343E
42"
50"
*RP01 0
*RP38 0
RP35 0
*IP04 TK73400TCB-G
RP39 1.0K
*RP41 22K
*RP36 100
*RP65 100
TPP03
*PFB1 ZH-04H
*RP34 10K
*DP22 SDS511
TPP04
*PFB2 ZH-04H
*RP33 10K
*RP32 0
RP31 0
*RP37 470K
DP23 UDZS6.2B
to BtoB (sheet4)
PTMP1
Optical Module (Digital Audio Output)
HL01 GP1FSV51TKOF
Vin
VCC
GND
LL01 10μH 2518
RL08 0
S/PDIF
SW+5V
GND1
30V Reg. for Tuner
to Tuner (sheet1)
VT+30V
DPS2 SDS511
CPS6 120p-C
LPS2 1000μH 3225
LPS1 220μH 2520
RPS1 100
+5.6V
CPS7 0.01
DPS1 UDZS30B
CPS4 120p-C
RPS2 47K
CPS5 0.01
QPS1 2SC5343E
CPS3 0.0015
CPS2 1.0/16 1005
CPS1 1.0/16
CPS8 10/10 2125
GND1
*RP45
*CP18 10/16 3225
*CP19 10/16 3225
*IP05
*CP20 0.1/16 1005
*QP05
*RP47 100
*CP23
*RP55 100
*CP22 0.01
RP49 5.6 6331
*RP51 1.5 6331
*CP21
*QP04
RP50 10K
*QP06
*DP10
GND1
LP02 CM04RC04T
LP03 CM04RC04T
*PTW 53290-05VP-D
GND
MOTOR+
MOTOR-
POINTDET
SW.COM
SWVLDET

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
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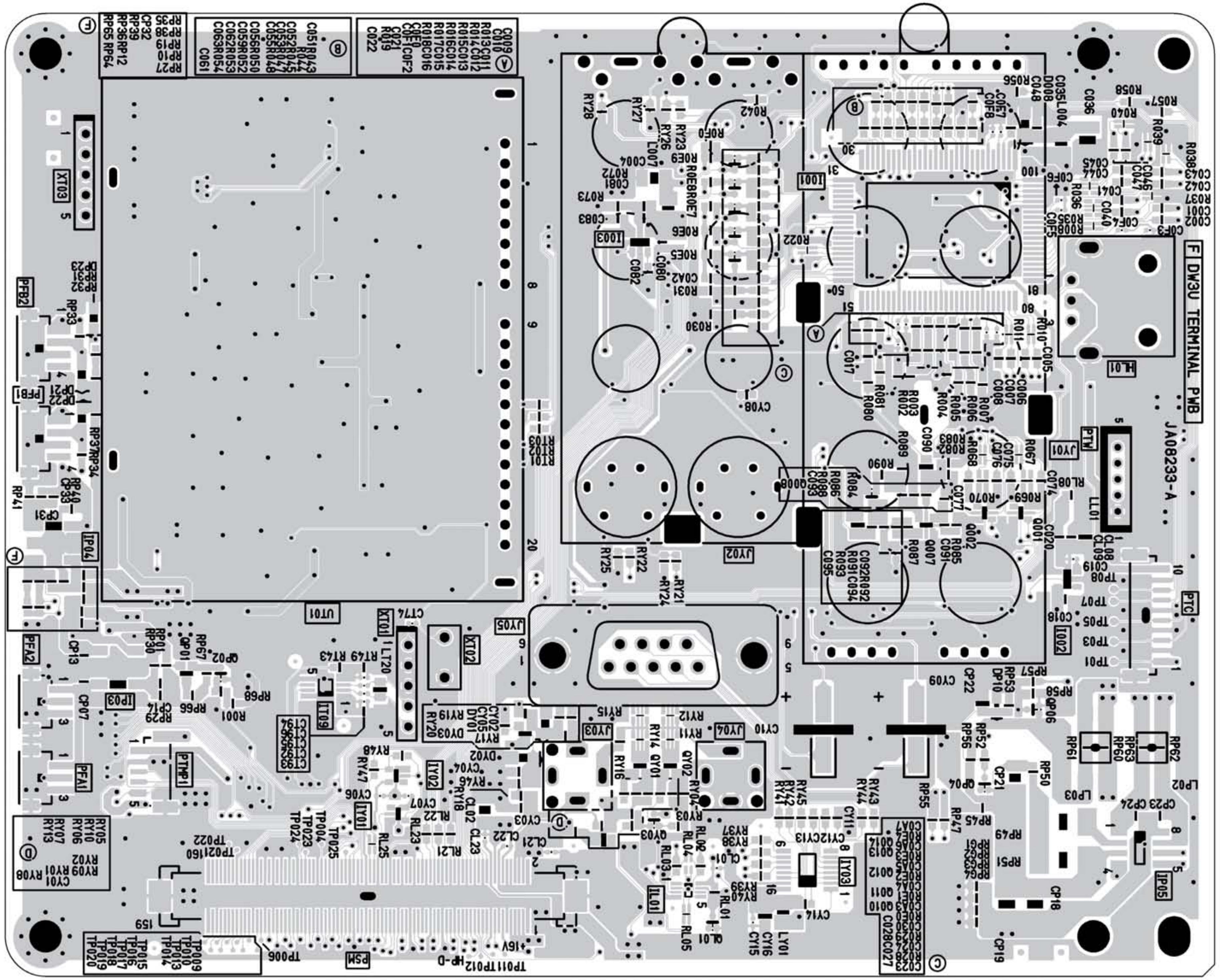
TERMINAL

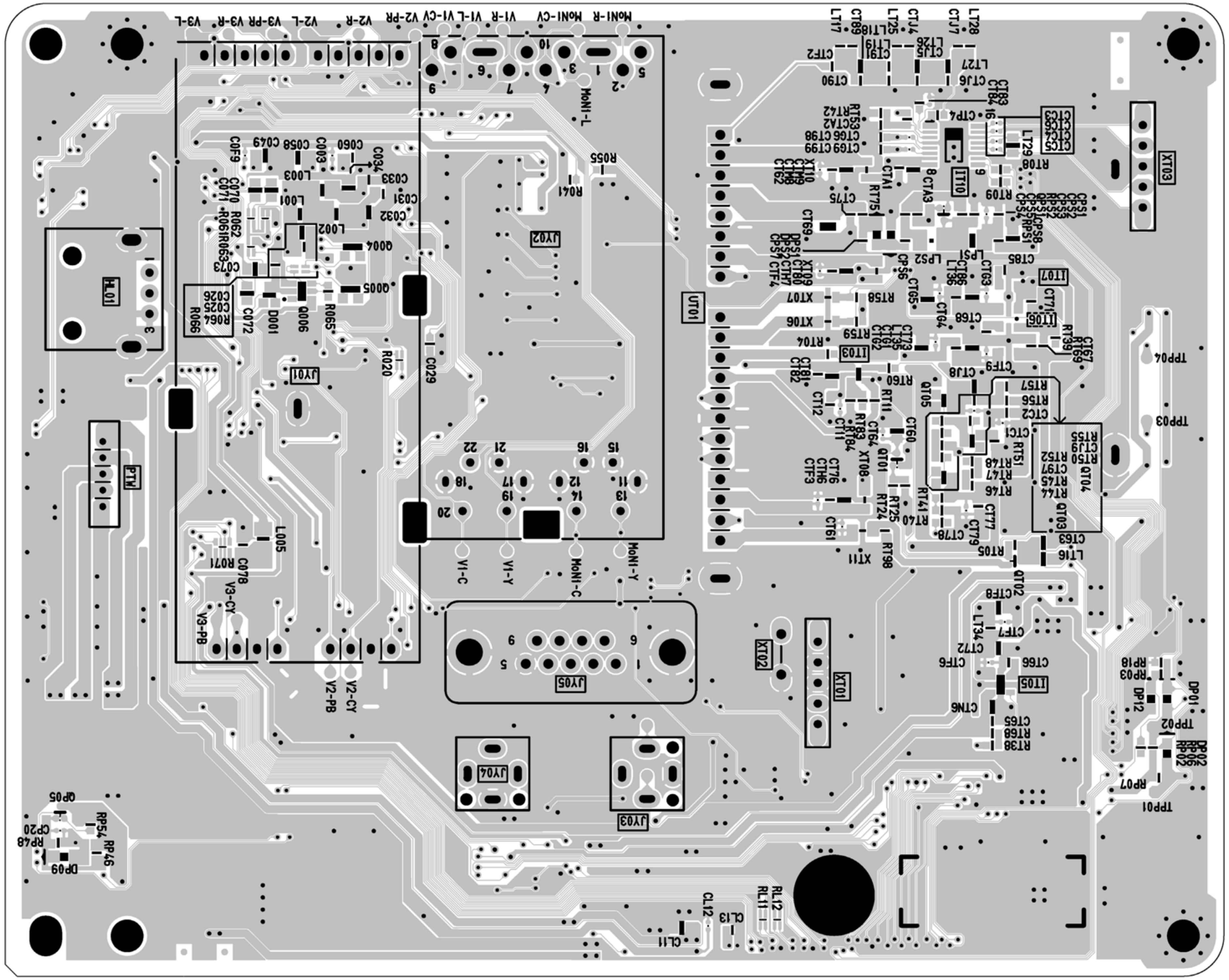
PRINTED CIRCUIT BOARDS

DW3-U TERMINAL PWB (Component side)


F DW3U TERMINAL PWB
JA08233-A

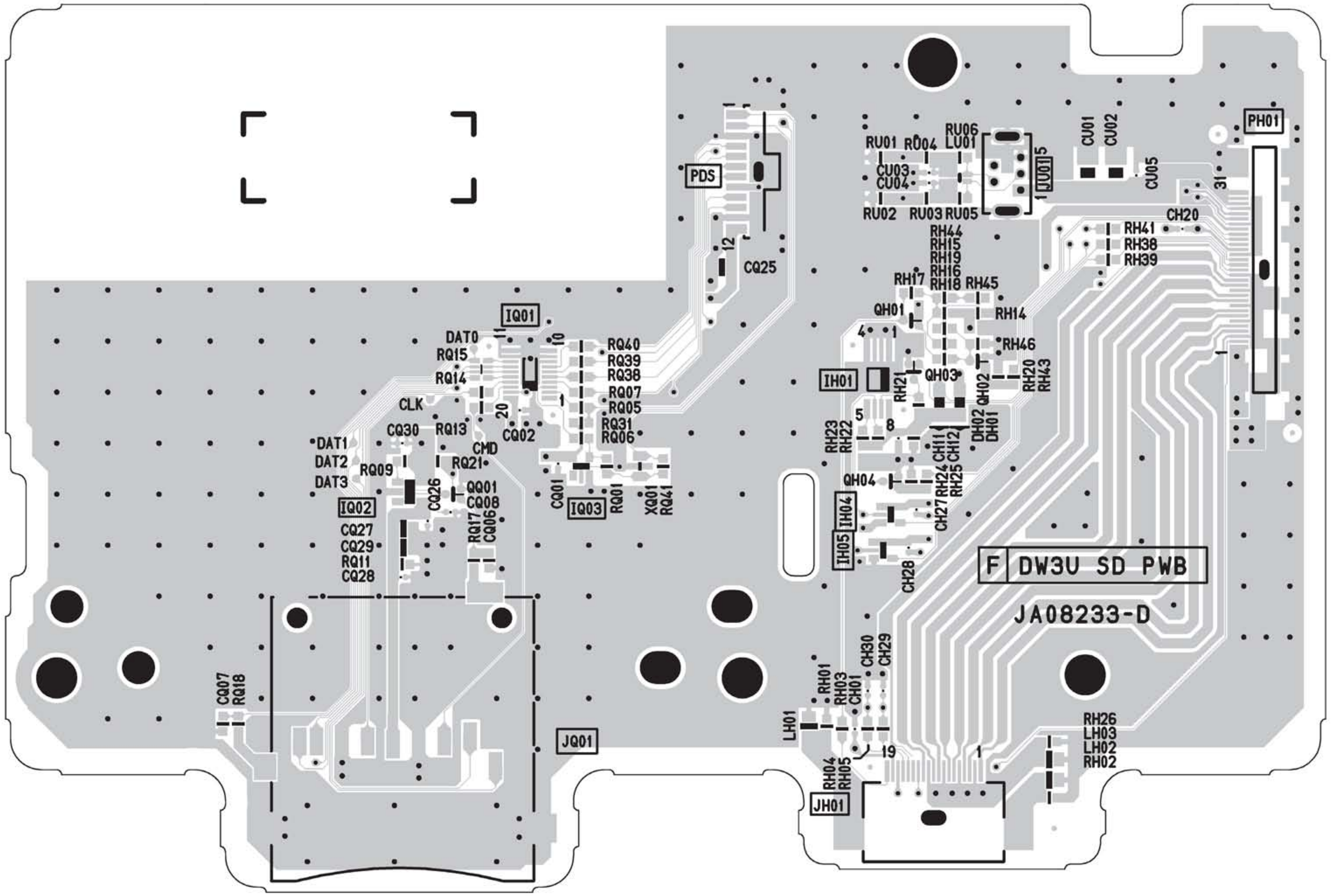
BACK TO TABLE OF CONTENTS

DW3-U TERMINAL PWB (Solder side)

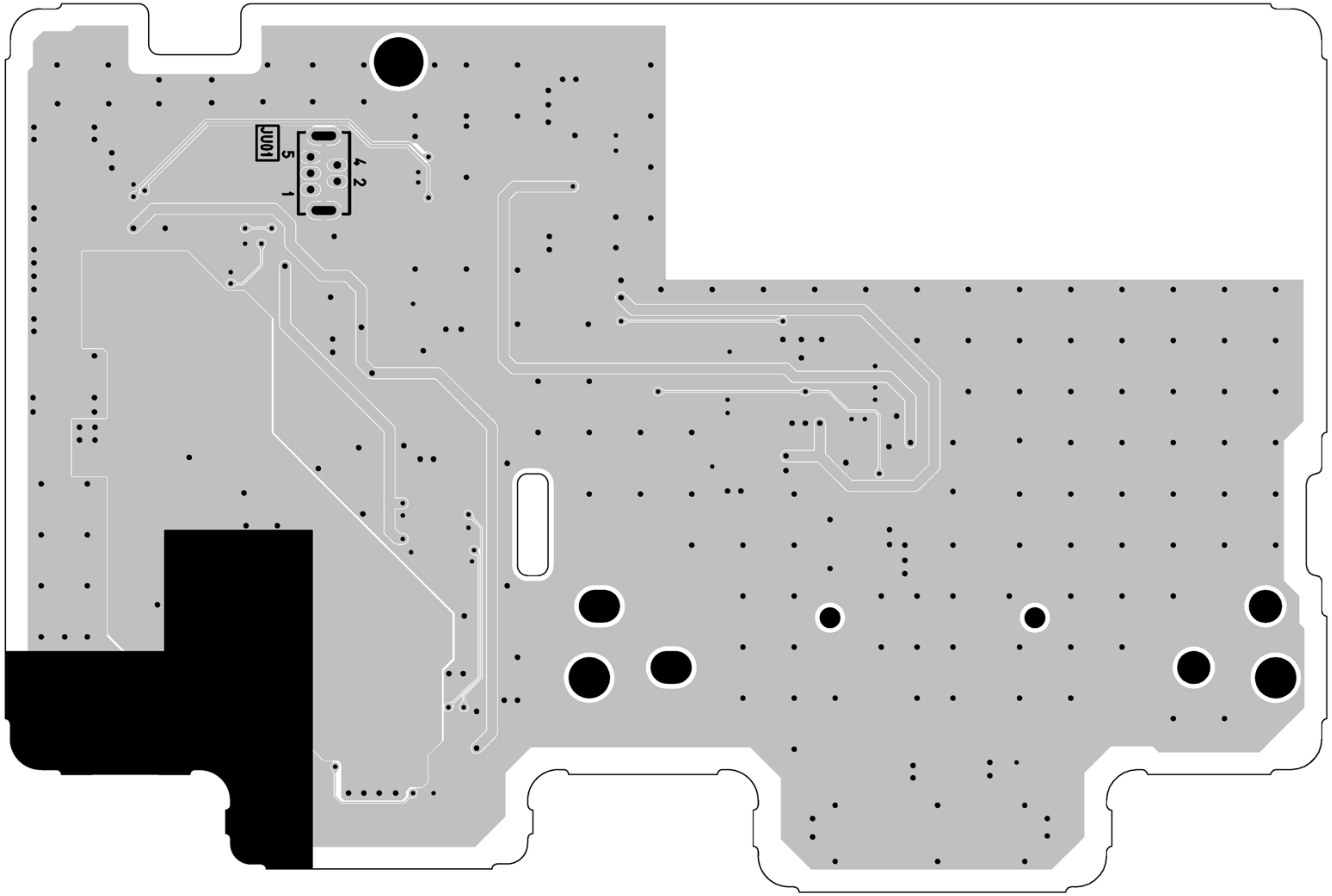

V3-L
V3-R
V3-PR
V2-L
V2-R
V2-PR
V1-CV
V1-L
V1-R
MONI-CV
MONI-R
MONI-L
V1-C
V1-Y
MONI-C
MONI-Y
V3-CY
V3-PB
V2-PB
V2-CY
JY01
JY02
JY03
JY04
JY05
UT01
XT01
XT02
XT03
PTW
HL01
TPP01
TPP02
TPP03
TPP04

PRINTED CIRCUIT BOARDS

DW3-U SD PWB (Component side)


PH01
CU01
CU02
CU05
RU06
LU01
RU01
RU04
CU03
CU04
JU01
RU02
RU03
RU05
5
1
31
CH20
RH41
RH38
RH39
RH44
RH15
RH19
RH16
RH17
RH18
RH45
PDS
12
CQ25
QH01
RH14
4
1
RH46
IQ01
DAT0
RQ15
RQ14
11
10
RQ40
RQ39
RQ38
RQ07
RQ05
RQ31
RQ06
CLK
20
CQ02
CQ30
RQ13
CMD
RQ21
DAT1
DAT2
DAT3
RQ09
CQ26
QQ01
CQ08
RQ17
CQ06
IQ02
CQ27
CQ29
RQ11
CQ28
CQ01
IQ03
RQ01
XQ01
RQ41
IH01
RH21
QH03
QH02
RH20
RH43
5
8
RH23
RH22
CH11
CH12
DH02
DH01
QH04
RH24
RH25
CH27
IH04
IH05
CH28
F DW3U SD PWB
JA08233-D
CQ07
RQ18
JQ01
CH30
CH29
RH01
RH03
CH01
LH01
19
1
RH04
RH05
JH01
RH26
LH03
LH02
RH02

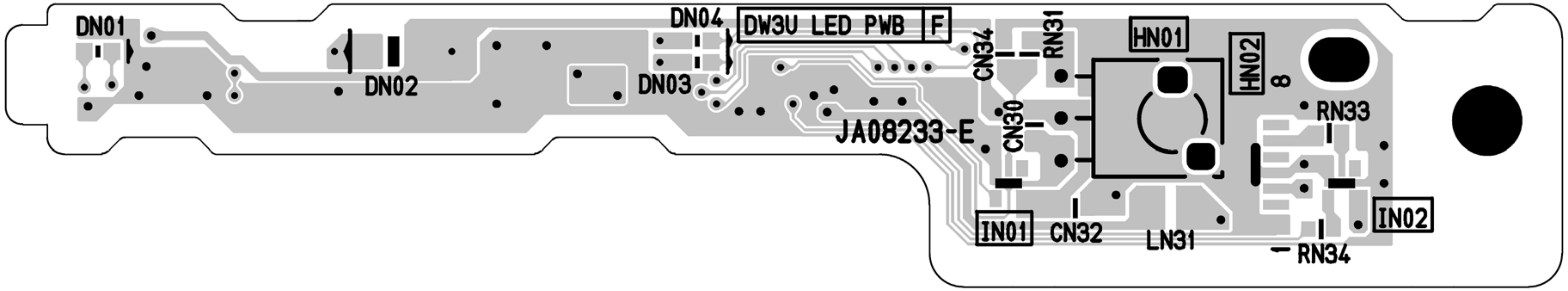
DW3-U SD PWB (Solder side)



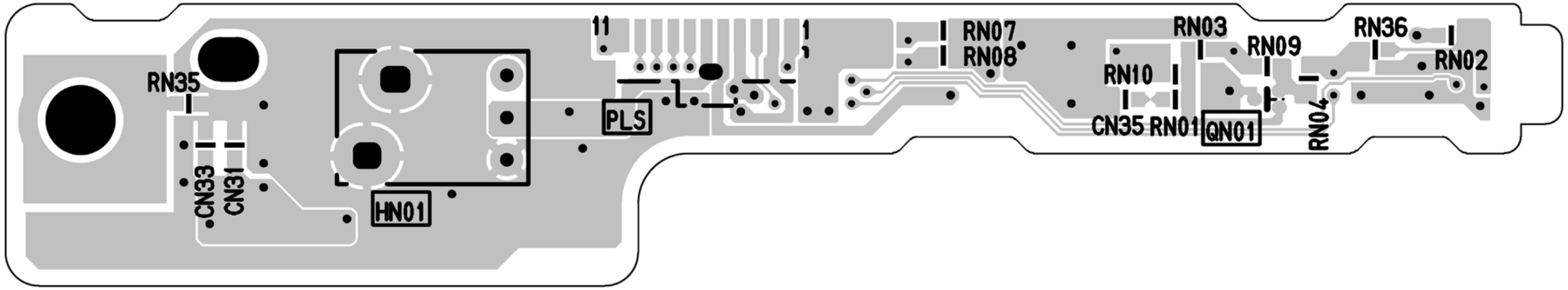
PRINTED CIRCUIT BOARDS

DW3-U LED PWB

(Component side)


DN01
DN02
DN04
DW3U LED PWB
F
DN03
CN34
RN31
HN01
HN02
8
RN33
JA08233-E
CN30
IN01
CN32
LN31
RN34
IN02

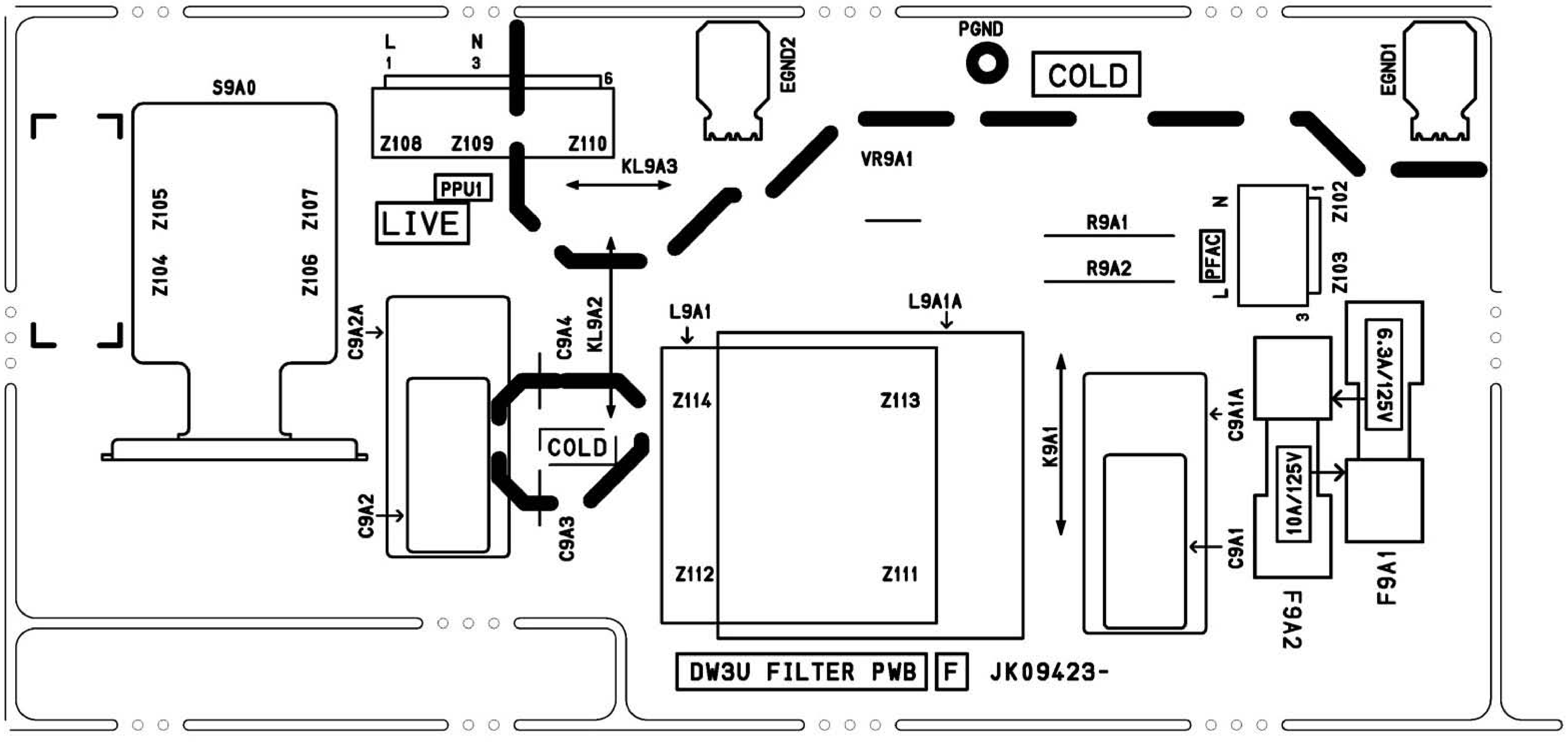
(Solder side)


RN35
CN33
CN31
HN01
11
1
1
PLS
RN07
RN08
RN03
RN09
RN36
RN02
RN10
CN35
RN01
QN01
RN04

PRINTED CIRCUIT BOARDS

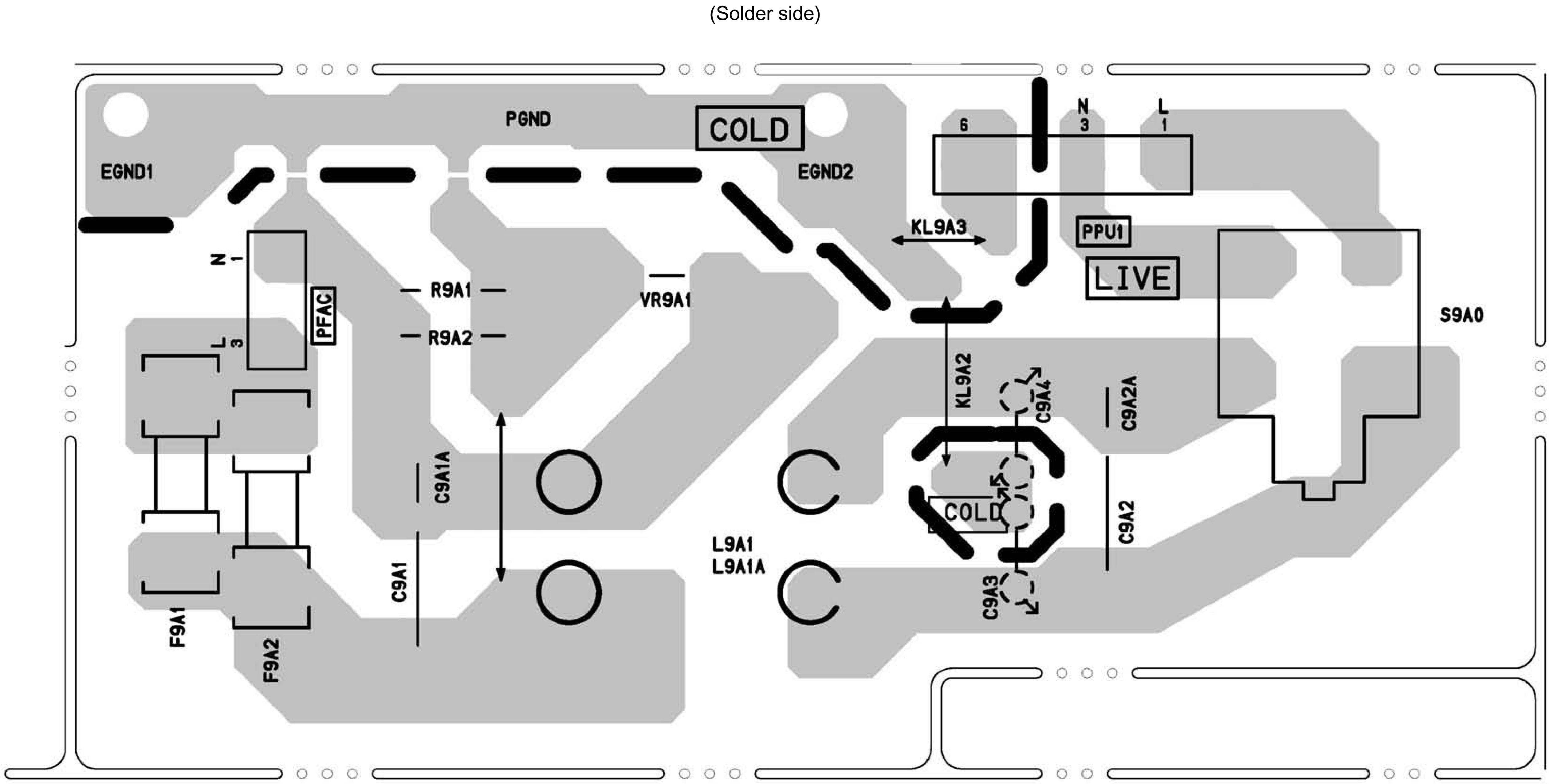
DW3-U FILTER PWB (Component side)

(Component side)


S9A0
L
N
1
3
6
Z108
Z109
Z110
PPU1
LIVE
KL9A3
EGND2
PGND
COLD
EGND1
VR9A1
R9A1
R9A2
N
PFAC
L
1
3
Z102
Z103
Z105
Z104
Z107
Z106
C9A2A
C9A4
KL9A2
C9A2
COLD
C9A3
L9A1
L9A1A
Z114
Z113
Z112
Z111
K9A1
C9A1A
C9A1
6.3A/125V
10A/125V
F9A2
F9A1
DW3U FILTER PWB
F
JK09423-

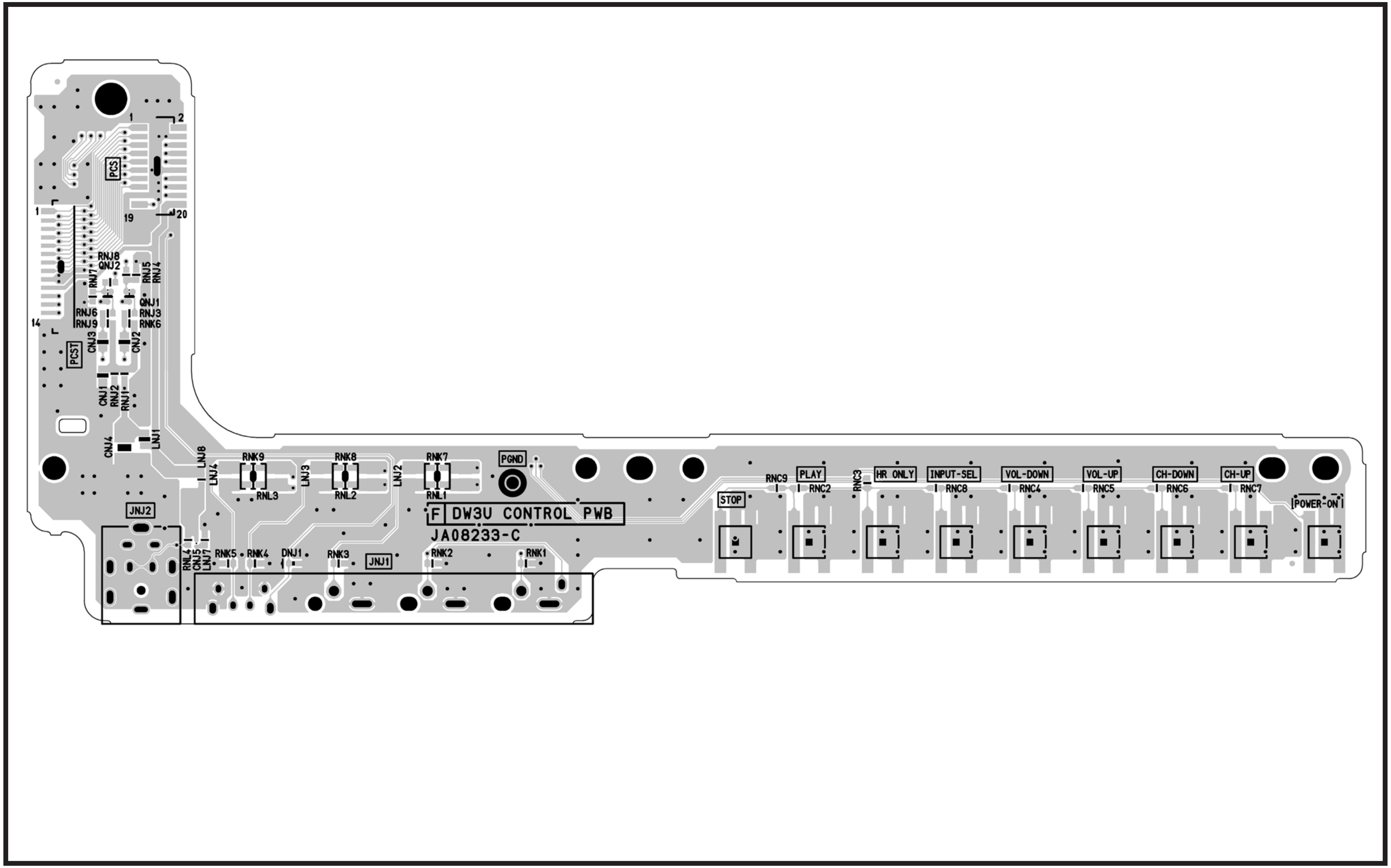
PRINTED CIRCUIT BOARDS

DW3-U FILTER PWB (Solder side)


(Solder side)
PGND
COLD
EGND1
EGND2
6
N
3
L
1
KL9A3
PPU1
LIVE
S9A0
N
1
L
3
PFAC
R9A1
R9A2
VR9A1
KL9A2
C9A4
C9A2A
C9A1A
C9A1
L9A1
L9A1A
COLD
C9A2
C9A3
F9A1
F9A2

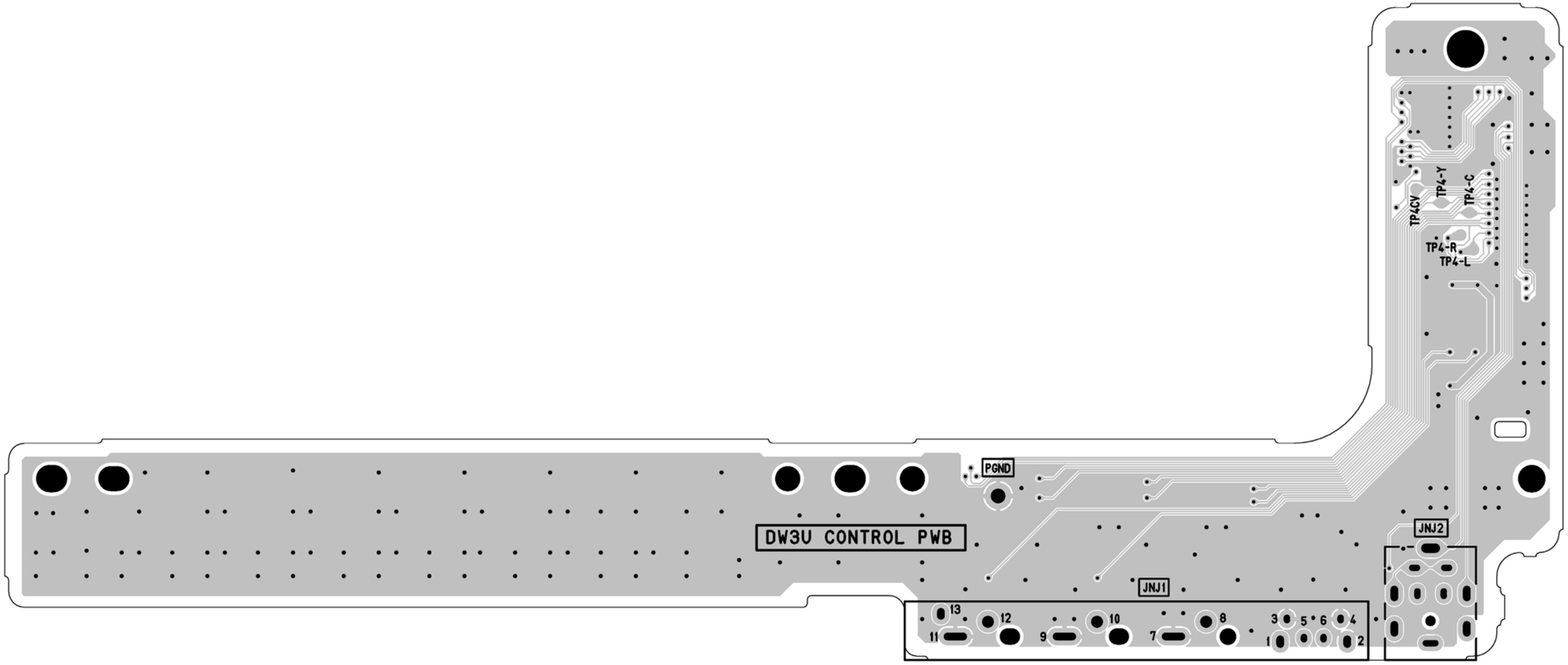
PRINTED CIRCUIT BOARDS

DW3-U CONTROL PWB (Component side)


1
2
PCS
19
20
1
14
RNJ8
QNJ2
RNJ7
RNJ5
RNJ4
QNJ1
RNJ6
RNJ3
RNJ9
RNK6
CNJ3
CNJ2
PCST
CNJ1
RNJ2
RNJ1
CNJ4
LNJ1
LNJ8
LNJ4
RNK9
RNL3
LNJ3
RNK8
RNL2
LNJ2
RNK7
RNL1
PGND
F DW3U CONTROL PWB
JA08233-C
JNJ2
RNL4
CNJ5
LNJ7
RNK5
RNK4
DNJ1
RNK3
JNJ1
RNK2
RNK1
RNC9
PLAY
RNC2
RNC3
HR ONLY
INPUT-SEL
RNC8
VOL-DOWN
RNC4
VOL-UP
RNC5
CH-DOWN
RNC6
CH-UP
RNC7
STOP
POWER-ON

PRINTED CIRCUIT BOARDS

DW3-U CONTROL PWB (Solder side)


DW3U CONTROL PWB
PGND
TP4CV
TP4-Y
TP4-C
TP4-R
TP4-L
JNJ1
JNJ2
13
12
11
10
9
8
7
3
5
6
4
1
2

REPLACEMENT PARTS LIST

PRODUCT SERVICE NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS

Capacitors:
- AL: Aluminum Electrolytic
- CD: Ceramic Disc
- EL: Electrolitic
- PF: Polyester Film
- PP: Polypropylene
- PL: Plastic
- TA: Tantalum
- PR: Paper
- TM: Trimmer
- MC: Mylar

Resistors:
- CF: Carbon Film
- CC: Carbon Composition
- MF: Metal Oxide
- VR: Variable Resistor
- WW: Wire Wound
- FR: Fuse Resistor
- MG: Metal Grazed

Semiconductors:
- TR: Transistor
- DI: Diode
- ZD: Zener Diode
- VA: Varistor
- TH: Termistor
- IC: Integrated Circuit

SYMBOL	PART No.	DESCRIPTION
		TERMINAL PWB
	JP55121	
		CAPACITORS
C001	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C002	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C003	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C004	AA00699R	CAP.CHIP-CERAMIC 10UFK 16V B 3
C005	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C006	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C007	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C008	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C009	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C010	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C011	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C012	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C013	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C014	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C015	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C016	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C017	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C018	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C019	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C020	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C021	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C022	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C023	0893188R	CERAMIC CAPACITOR(47000PF 16V)
C024	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C025	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C026	AA00969R	CAP.CHIP2125-B-22UF6.3V
C027	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C028	AA01343R	CERAMIC CAPACITOR(0.047UF 25V-
C029	0893188R	CERAMIC CAPACITOR(47000PF 16V)
C030	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C031	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C032	AA00969R	CAP.CHIP2125-B-22UF6.3V
C033	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C034	AA00969R	CAP.CHIP2125-B-22UF6.3V
C035	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C036	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32
C040	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C041	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C042	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C043	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C044	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C045	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C046	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C047	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C048	AA01115R	CAP.CHIP1608-B-4.7UF6.3V
C049	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C051	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C052	AA01343R	CERAMIC CAPACITOR(0.047UF 25V-
C053	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C055	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C056	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C058	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C059	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C060	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C061	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C062	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C063	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C070	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C071	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C072	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C073	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C078	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C080	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C081	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
C082	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
C083	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C090	AA00951R	CERAMIC CAPACITOR(1.0UF 16V)
C091	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C092	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C093	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C094	AA01113R	CCC225K06-B-16CT
C095	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C0A2	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C0F0	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC

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SYMBOL	PART #	DESCRIPTION
C0F1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F2	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F5	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F8	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH01	0893348R	CCC103K25-B-10CT 1005-B-0.01UF
CH11	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH12	AA01116R	CAP.CHIP1608-B-10UF 6.3V M
CH20	0893348R	CCC103K25-B-10CT 1005-B-0.01UF
CH27	AA01216R	CAP.CHIP-CERAMIC 1005B 1UF 6.3
CH28	AA01216R	CAP.CHIP-CERAMIC 1005B 1UF 6.3
CH29	CE00151R	EZJZ0V80010
CH30	CE00151R	EZJZ0V80010
CL01	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CL02	AA00699R	CAP.CHIP-CERAMIC 10UFK 16V B 3
CL11	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CN30	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CN32	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CNJ1	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CNJ2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CNJ3	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CNJ4	AA00421R	CERAMIC CAPACITOR(10UF 16V)
CP07	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CP13	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CP14	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPS1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CPS2	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CPS3	0893211R	CAP 1608CHIP 1500PFKB 50V TAPE
CPS4	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE
CPS5	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPS6	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE
CPS7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CPS8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CQ01	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CQ02	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CQ06	0790039R	RES.CHIP 1/16W 1.5K OHM
CQ07	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
CQ08	0893348R	CCC103K25-B-10CT 1005-B-0.01UF
CQ25	AA00969R	CAP.CHIP2125-B-22UF6.3V
CQ26	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CQ27	AA00969R	CAP.CHIP2125-B-22UF6.3V
CQ28	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CQ29	AA00969R	CAP.CHIP2125-B-22UF6.3V
CQ30	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT11	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT12	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CT60	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT61	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT62	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT63	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT64	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT65	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT66	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT67	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT68	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT69	AA01173R	CCC1R0K50-B-32CT 1UF/50V-B-3225
CT71	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT72	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT73	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT74	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT75	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CT76	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT77	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
CT78	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CT79	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT80	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT81	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT85	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CT86	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CT92	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT93	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CT95	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT96	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CT97	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTC1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTC2	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTF3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTF4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTF6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTF7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTF8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTF9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTG1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTG2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTG3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTG4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CTG5	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTH6	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTH7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTJ8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTM8	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CTM9	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CTN6	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CY02	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CY03	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CY04	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CY05	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CY08	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CY09	AD00433R	CEC471M10-EWCT
CY10	AD00433R	CEC471M10-EWCT
CY11	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CY12	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CY13	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CY14	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CY15	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CY16	AA00966R	CERAMIC CAPACITOR(4.7UF 6.3V)
		DIODES
D001	CC01921R	SDS142WKF_PF
DH01	CC01891R	SDS511_PF
DH02	CC01891R	SDS511_PF
DN01	CC01871R	LIGHT EMITTING DIODE
DN02	CC01863R	LIGHT EMITTING DIODE (SML012BC4T)
DN03	CC01872R	LIGHT EMITTING DIODE
DP02	CC01891R	SDS511_PF
DPS1	CC02022R	ZENER.CHIP UDZSTE-1730B
DPS2	CC01891R	SDS511_PF
DY01	CC01999R	ZENER.CHIP UDZSTE-174.3B
DY02	CC01999R	ZENER.CHIP UDZSTE-174.3B
		MODULES
HL01	CZ01391	ANALOG MONOLITHIC IC (GP1FSV51TK0F)
HN01	CZ01371U	INFRARED DETECTING UNIT(GP1UE281RK0VF)
		INTEGRATED CIRCUITS (IC's)
I001	CK53531U	R2S11008FP
I002	CK37218R	MONO IC TK11150CSCL
I003	CK51331R	TK11100CS
IH01	CK53582R	S-24CS02AFT-TB-G
IH04	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC
IH05	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC
IL01	CK50961R	SN74CB3T3306DCUR
IN01	CK55475R	1GATE LOGIC IC (TC7SZ14FU)
IP03	CK52481R	TK73400TCB-G
IQ01	CK53741R	TC7MBL3245AFK
IQ02	CK37216R	MONO IC TK11133CSCL
IQ03	CK55511R	1G LOGIC IC (TC7SG17FU)
IT03	CK53612R	TC7PA53FU
IT05	CK37218R	MONO IC TK11150CSCL
IT06	CK37605R	IC TK11250CM
IT07	CK37605R	IC TK11250CM
IT09	CK51152R	UPC3231GV
IY03	CK50027R	DIGITAL MONOLITHIC IC (MAX202I
		COILS
L001	BA00887R	LBC2518 CHIP COIL 10UH

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SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
L002	BA00887R	LBC2518 CHIP COIL 10UH	R041	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
L003	BA00887R	LBC2518 CHIP COIL 10UH	R042	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
L004	BA00887R	LBC2518 CHIP COIL 10UH	R043	0790024R	RES.CHIP 1/16W 100 OHM
L005	BA00887R	LBC2518 CHIP COIL 10UH	R044	0790037R	RES.CHIP 1/16W 1.0K OHM
L007	BA00887R	LBC2518 CHIP COIL 10UH	R045	0790024R	RES.CHIP 1/16W 100 OHM
LNJ1	BA02646R	LBR2012 CHIP INDUCTOR 47UH	R047	0790024R	RES.CHIP 1/16W 100 OHM
LNJ2	BM00241R	CHOKE COIL-CHIP (TYPE RC04)	R048	0790024R	RES.CHIP 1/16W 100 OHM
LPS1	BA02185R	HCC221J2520CT	R050	0790024R	RES.CHIP 1/16W 100 OHM
LPS2	BA02244R	HCC102J32CT	R052	0790024R	RES.CHIP 1/16W 100 OHM
LT16	BM00151R	FILTER BLM21P300SPT	R053	0790024R	RES.CHIP 1/16W 100 OHM
LT20	BA01127R	MLF2012 CHIP INDUCTOR 1.8UH	R054	0790024R	RES.CHIP 1/16W 100 OHM
LT34	BM10348R	CHIP FERRITE BEAD BLM18PG121SN	R055	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
LT35	BM10348R	CHIP FERRITE BEAD BLM18PG121SN	R056	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
LT36	BM10348R	CHIP FERRITE BEAD BLM18PG121SN	R058	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
LY01	BA00894R	LBC2518 CHIP COIL 100UH	R061	AQ03317R	RES.CHIP 1/16W 1KOHM
			R062	AQ03343R	RES.CHIP 1/16W 82KOHM
		TRANSISTORS	R063	AQ03308R	RES.CHIP 1/16W 220OHM
Q002	CA02162R	SUT487J	R064	AQ03331R	RES.CHIP 1/16W 10KOHM
Q004	CA03271R	SMD TRS 2SD2704K	R065	0790051R	RES.CHIP 1/16W 10K OHM
Q005	CA03271R	SMD TRS 2SD2704K	R066	0790073R	RES.CHIP 1/16W 470K OHM
Q006	CA01181R	D-TRS.CHIP IMD10A	R068	AQ03317R	RES.CHIP 1/16W 1KOHM
Q007	CA02162R	SUT487J	R071	AQ00544R	CHIP RESISTOR 3.3KOHM
Q008	CA14091R	PHOTO TRANSISTOR	R072	AQ00266R	RES.CHIP 1/16W 510K OHM TAPE
Q010	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R073	AQ00245R	RES.CHIP 1/16W 82K OHM TAPE
Q011	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R080	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
Q012	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R082	0790059R	RES.CHIP 1/16W 47K OHM
Q013	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R083	0790059R	RES.CHIP 1/16W 47K OHM
Q014	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R084	0790051R	RES.CHIP 1/16W 10K OHM
QH01	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R085	0790064R	RES.CHIP 1/16W 100K OHM
QH02	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R086	0790037R	RES.CHIP 1/16W 1.0K OHM
QH03	CA02092R	SRC1202EF	R087	0790064R	RES.CHIP 1/16W 100K OHM
QH04	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R088	0790064R	RES.CHIP 1/16W 100K OHM
QL01	CA02091R	SRC1204EF_PF	R089	0790064R	RES.CHIP 1/16W 100K OHM
QNJ1	CA14091R	PHOTO TRANSISTOR	R090	0790051R	RES.CHIP 1/16W 10K OHM
QNJ2	CA14091R	PHOTO TRANSISTOR	R091	0790051R	RES.CHIP 1/16W 10K OHM
QP01	CA01011R	TRS.CHIP 2SK3018	R092	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QP02	CA14091R	PHOTO TRANSISTOR	R093	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QPS1	CA14091R	PHOTO TRANSISTOR	R0E0	0790015R	RES.CHIP 1/16W 22 OHM
QQ01	CA02091R	SRC1204EF_PF	R0E1	0790015R	RES.CHIP 1/16W 22 OHM
QT01	CA14091R	PHOTO TRANSISTOR	R0E2	0790015R	RES.CHIP 1/16W 22 OHM
QT02	CA14091R	PHOTO TRANSISTOR	R0E3	0790015R	RES.CHIP 1/16W 22 OHM
QT03	CA02171R	TRS.CHIP 2SC4082T106P	R0E4	0790015R	RES.CHIP 1/16W 22 OHM
QT04	CA02171R	TRS.CHIP 2SC4082T106P	R0E5	0790037R	RES.CHIP 1/16W 1.0K OHM
QT05	CA02171R	TRS.CHIP 2SC4082T106P	R0E6	0790037R	RES.CHIP 1/16W 1.0K OHM
			R0E7	0790037R	RES.CHIP 1/16W 1.0K OHM
		RESISTORS	R0E8	0790037R	RES.CHIP 1/16W 1.0K OHM
R001	0790051R	RES.CHIP 1/16W 10K OHM	R0E9	0790037R	RES.CHIP 1/16W 1.0K OHM
R002	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	R0F0	0790037R	RES.CHIP 1/16W 1.0K OHM
R003	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH01	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R004	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH02	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R005	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH03	0790024R	RES.CHIP 1/16W 100 OHM
R006	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH04	0790024R	RES.CHIP 1/16W 100 OHM
R007	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH05	0790024R	RES.CHIP 1/16W 100 OHM
R008	AQ03317R	RES.CHIP 1/16W 1KOHM	RH14	0790064R	RES.CHIP 1/16W 100K OHM
R010	AQ03317R	RES.CHIP 1/16W 1KOHM	RH15	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R011	AQ03317R	RES.CHIP 1/16W 1KOHM	RH17	0790037R	RES.CHIP 1/16W 1.0K OHM
R013	0790024R	RES.CHIP 1/16W 100 OHM	RH18	0790024R	RES.CHIP 1/16W 100 OHM
R014	0790024R	RES.CHIP 1/16W 100 OHM	RH19	0790051R	RES.CHIP 1/16W 10K OHM
R015	0790024R	RES.CHIP 1/16W 100 OHM	RH20	0790051R	RES.CHIP 1/16W 10K OHM
R016	0790024R	RES.CHIP 1/16W 100 OHM	RH21	0790051R	RES.CHIP 1/16W 10K OHM
R017	0790024R	RES.CHIP 1/16W 100 OHM	RH22	0790059R	RES.CHIP 1/16W 47K OHM
R018	0790024R	RES.CHIP 1/16W 100 OHM	RH23	0790059R	RES.CHIP 1/16W 47K OHM
R019	0790024R	RES.CHIP 1/16W 100 OHM	RH24	0790046R	RES.CHIP 1/16W 4.7K OHM
R020	AQ03317R	RES.CHIP 1/16W 1KOHM	RH25	0790046R	RES.CHIP 1/16W 4.7K OHM
R022	AQ03361R	RES.CHIP 1/16W 0OHM	RH26	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R028	0790024R	RES.CHIP 1/16W 100 OHM	RH38	0790024R	RES.CHIP 1/16W 100 OHM
R029	0790024R	RES.CHIP 1/16W 100 OHM	RH39	0790024R	RES.CHIP 1/16W 100 OHM
R030	0790051R	RES.CHIP 1/16W 10K OHM	RH41	0790024R	RES.CHIP 1/16W 100 OHM
R031	0790051R	RES.CHIP 1/16W 10K OHM	RH43	0790051R	RES.CHIP 1/16W 10K OHM
R035	AQ00537R	4-NETWORKED CHIP RESISTOR 1.0K	RH44	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R036	AQ00537R	4-NETWORKED CHIP RESISTOR 1.0K	RL01	0790046R	RES.CHIP 1/16W 4.7K OHM
R037	AQ03344R	RES.CHIP 1/16W 100KOHM	RL02	0790027R	RES.CHIP 1/16W 180 OHM
R038	AQ03344R	RES.CHIP 1/16W 100KOHM	RL03	0790027R	RES.CHIP 1/16W 180 OHM
R039	AQ03344R	RES.CHIP 1/16W 100KOHM	RL04	AQ03331R	RES.CHIP 1/16W 10KOHM
R040	AQ03344R	RES.CHIP 1/16W 100KOHM	RL05	AQ03361R	RES.CHIP 1/16W 0OHM

PRODUCT SERVICE NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
RL08	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RT43	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RL11	AQ03299R	RES.CHIP 1/16W 47OHM	RT44	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
RL12	AQ03299R	RES.CHIP 1/16W 47OHM	RT45	0790043R	RES.CHIP 1/16W 2.7K OHM
RL21	0790019R	RES.CHIP 1/16W 47 OHM	RT46	AQ00258R	RES.CHIP 1/16W 270K OHM TAPE
RL22	0790019R	RES.CHIP 1/16W 47 OHM	RT47	AQ00247R	RES.CHIP 1/16W 100K OHM TAPE
RL23	0790019R	RES.CHIP 1/16W 47 OHM	RT48	AQ00229R	RES.CHIP 1/16W 22K OHM TAPE
RL25	AQ03299R	RES.CHIP 1/16W 47OHM	RT50	0790046R	RES.CHIP 1/16W 4.7K OHM
RN02	0790039R	RES.CHIP 1/16W 1.5K OHM	RT51	0790037R	RES.CHIP 1/16W 1.0K OHM
RN03	0790029R	RES.CHIP 1/16W 270 OHM	RT52	0790046R	RES.CHIP 1/16W 4.7K OHM
RN08	0790034R	RES.CHIP 1/16W 560 OHM	RT55	0790052R	RES.CHIP 1/16W 12K OHM
RN31	0790024R	RES.CHIP 1/16W 100 OHM	RT56	AQ00212R	RES.CHIP 1/16W 4.7K OHM TAPE
RN36	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RT57	AQ00244R	RES.CHIP 1/16W 75K OHM TAPE
RNC3	0790037R	RES.CHIP 1/16W 1.0K OHM	RT58	0790046R	RES.CHIP 1/16W 4.7K OHM
RNC4	0790046R	RES.CHIP 1/16W 4.7K OHM	RT59	0790046R	RES.CHIP 1/16W 4.7K OHM
RNC5	0790043R	RES.CHIP 1/16W 2.7K OHM	RT60	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RNC6	0790039R	RES.CHIP 1/16W 1.5K OHM	RT75	0790043R	RES.CHIP 1/16W 2.7K OHM
RNC7	0790037R	RES.CHIP 1/16W 1.0K OHM	RT83	0790052R	RES.CHIP 1/16W 12K OHM
RNC8	0790051R	RES.CHIP 1/16W 10K OHM	RT84	0790064R	RES.CHIP 1/16W 100K OHM
RNJ1	0790044R	RES.CHIP 1/16W 3.3K OHM	RT98	0790055R	RES.CHIP 1/16W 22K OHM
RNJ2	0790042R	RES.CHIP 1/16W 2.2K OHM	RY17	0790028R	RES.CHIP 1/16W 220 OHM
RNJ3	0790037R	RES.CHIP 1/16W 1.0K OHM	RY18	0790028R	RES.CHIP 1/16W 220 OHM
RNJ4	0790037R	RES.CHIP 1/16W 1.0K OHM	RY19	0790028R	RES.CHIP 1/16W 220 OHM
RNJ5	0790024R	RES.CHIP 1/16W 100 OHM	RY20	0790028R	RES.CHIP 1/16W 220 OHM
RNJ6	0790037R	RES.CHIP 1/16W 1.0K OHM	RY21	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
RNJ7	0790037R	RES.CHIP 1/16W 1.0K OHM	RY22	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
RNJ8	0790024R	RES.CHIP 1/16W 100 OHM	RY23	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
RNJ9	0790061R	RES.CHIP 1/16W 56K OHM	RY24	0790064R	RES.CHIP 1/16W 100K OHM
RNK1	0790069R	RES.CHIP 1/16W 270K OHM	RY25	0790064R	RES.CHIP 1/16W 100K OHM
RNK2	0790069R	RES.CHIP 1/16W 270K OHM	RY26	0790064R	RES.CHIP 1/16W 100K OHM
RNK6	0790061R	RES.CHIP 1/16W 56K OHM	RY27	0790064R	RES.CHIP 1/16W 100K OHM
RNK8	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY28	0790064R	RES.CHIP 1/16W 100K OHM
RNK9	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY37	0790037R	RES.CHIP 1/16W 1.0K OHM
RNL2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY38	0790037R	RES.CHIP 1/16W 1.0K OHM
RNL3	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY39	0790037R	RES.CHIP 1/16W 1.0K OHM
RP03	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY40	0790037R	RES.CHIP 1/16W 1.0K OHM
RP07	0790051R	RES.CHIP 1/16W 10K OHM	RY41	0790037R	RES.CHIP 1/16W 1.0K OHM
RP12	0790024R	RES.CHIP 1/16W 100 OHM	RY42	0790037R	RES.CHIP 1/16W 1.0K OHM
RP18	0790073R	RES.CHIP 1/16W 470K OHM	RY43	0790037R	RES.CHIP 1/16W 1.0K OHM
RP19	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY44	0790037R	RES.CHIP 1/16W 1.0K OHM
RP29	AQ00249R	RES.CHIP 1/16W 120K OHM TAPE	RY45	0790037R	RES.CHIP 1/16W 1.0K OHM
RP30	0790055R	RES.CHIP 1/16W 22K OHM	RY46	0790056R	RES.CHIP 1/16W 27K OHM
RP58	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY47	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RP66	0790072R	RES.CHIP 1/16W 390K OHM	RY48	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RP67	0790051R	RES.CHIP 1/16W 10K OHM			
RP68	0790051R	RES.CHIP 1/16W 10K OHM			**SWITCHES**
RPS1	0790024R	RES.CHIP 1/16W 100 OHM	SNC1	FB00021R	CHIP PUSH SWITCH
RPS2	0790059R	RES.CHIP 1/16W 47K OHM	SNC2	FB00021R	CHIP PUSH SWITCH
RQ05	0790019R	RES.CHIP 1/16W 47 OHM	SNC3	FB00021R	CHIP PUSH SWITCH
RQ06	0790019R	RES.CHIP 1/16W 47 OHM	SNC4	FB00021R	CHIP PUSH SWITCH
RQ07	0790019R	RES.CHIP 1/16W 47 OHM	SNC5	FB00021R	CHIP PUSH SWITCH
RQ09	0790051R	RES.CHIP 1/16W 10K OHM	SNC6	FB00021R	CHIP PUSH SWITCH
RQ11	0790061R	RES.CHIP 1/16W 56K OHM	SNC7	FB00021R	CHIP PUSH SWITCH
RQ13	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			
RQ14	0790015R	RES.CHIP 1/16W 22 OHM			**CRYSTALS, FILTERS**
RQ15	AQ00501R	CHIP RESISTOR 0OHM	XT01	BG01624U	SAW FILTER(X6875D)
RQ17	0790019R	RES.CHIP 1/16W 47 OHM	XT02	BN00261	BGS TRAP MKTGA47M2CAHP00B05
RQ18	0790019R	RES.CHIP 1/16W 47 OHM	XT06	BK00199R	CERAMIC FILTER 2012TYPE
RQ21	0790038R	RES.CHIP 1/16W 1.2K OHM	XT07	BK00199R	CERAMIC FILTER 2012TYPE
RQ31	0790046R	RES.CHIP 1/16W 4.7K OHM	XT08	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ38	0790019R	RES.CHIP 1/16W 47 OHM	XT09	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ39	0790019R	RES.CHIP 1/16W 47 OHM	XT10	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ40	0790019R	RES.CHIP 1/16W 47 OHM	XT11	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ41	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			
RT01	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			**CONNECTORS, JACKS**
RT02	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JH01	EA02291U	HDMI RECEPTACLE DC1R019HBA
RT03	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JNJ1	EQ00873	PLUG LPR8029-04**F
RT04	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JQ01	EY01772R	SD MEMORY CARD 500998-0900
RT05	0790037R	RES.CHIP 1/16W 1.0K OHM	JY01	EQ00721	JACK
RT11	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JY02	EQ00961	JACK
RT24	0790037R	RES.CHIP 1/16W 1.0K OHM	JY03	EQ00741	JACK
RT25	0790051R	RES.CHIP 1/16W 10K OHM	JY05	EQ00771	JACK
RT38	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	PCST	EA04044R	14P 1.25MM PITCH CONNE. (502382)
RT39	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	PDS	EA02332R	12P 1.0MM PITCH CONNE. 501331-1207
RT40	0790052R	RES.CHIP 1/16W 12K OHM	PFA1	EA02192R	3P SMT ZH CONN. POST SIDE
RT41	0790052R	RES.CHIP 1/16W 12K OHM	PH01	EA02662R	PLUG

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SYMBOL	PART #	DESCRIPTION
PLS	EA02331R	11P 1.0MM PITCH CONNE. 501331-
PSM	EA02223U	0.5 PITCH 160P B TO B CONN. SHIELD TYPE RECE
PTC	EA04039R	10P 1.25MM PITCH CONNE. (502382)
		MISCELLANEOUS
UT01	HC00701	ENGD6305
#TG1	MF02032	GASKET 5-2-15 J1G
#TG2	MF02033	GASKET 5-2-45 J1G
		FILTER PWB
	JP55131	
		CAPACITORS
C9A1A ⚠	AN02089S	PLASTIC FILM CAP.CQ-105K251PVS
C9A2A ⚠	AN02089S	PLASTIC FILM CAP.CQ-105K251PVS
C9A3 ⚠	AJ00163R	CAP. CERAMIC CS11-E2GA222MYVS
C9A4 ⚠	AJ00163R	CAP. CERAMIC CS11-E2GA222MYVS
		JUMPERS
K9A1	2784381M	0.60MM TAPED JUMP.WIRE
KL9A2	2784381M	0.60MM TAPED JUMP.WIRE
KL9A3	2784381M	0.60MM TAPED JUMP.WIRE
		PROTECTORS, FUSES
F9A1 ⚠	FN00478	FUSE 51MS 100 L-U 125V 10A
NF9A1 ⚠	2721351	FUSE HOLDER
		COILS
L9A1A ⚠	BZ06241	LINE FILTER TF3022H-A172Y10R0-
		RESISTORS
R9A1 ⚠	AT03661M	RES.MTL GRAZD FLM 1/2W 470K
		SWITCHES
S9A0 ⚠	FG00251	POWER SW SPW02N02SY17-2-1(U1D1
		CONNECTORS, JACKS
EGND1	ED01651R	CONNECTOR CP-03PH2R5V
EGND2	ED01651R	CONNECTOR CP-03PH2R5V
PFAC	2674281	3P B-PLUG PIN
PPU1	ED02812	6P VH CONNECTOR PLUG #2,4,5 NC
		FINAL ASS'Y
		SPEAKERS
SPB	GK01651	SPEAKER-04X15D
		MISCELLANEOUS
EFAN	GS00696	DC MOTOR:DC2406KL-04W-B29-T0E
		CONNECTORS, JACKS
E901 ⚠	EP00411	AC INLET SK-1015(F1-0)
ECN1	EF25783	51P LVDS CABLE L=360 (FI-R DF13)
ECN23	EF25995	10P VH CONNE. L=360MM
ECN6	2908838S	9J PH CONNECTOR 200MM
EFAC	EF27391	3P VH-SPS-61T-250 X 4 LEAD L=110MM

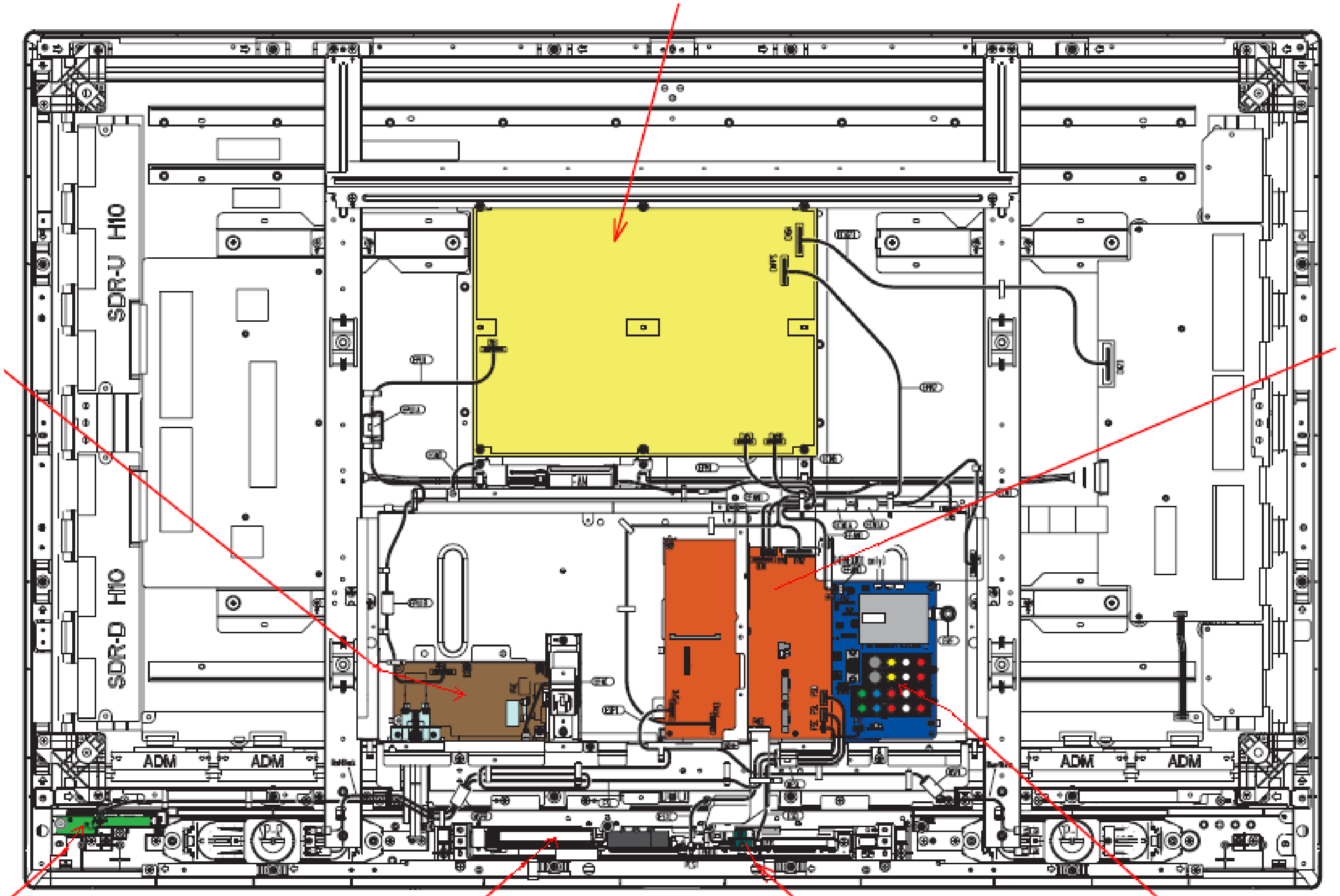
SYMBOL	PART #	DESCRIPTION
EFAN1	EF26106	3P 2.0MM PITCH PALR-ZH CONNE. L=225MM
EGND	EF24041	CO-01T-T0R0-101
EMH	EK01933	WIRE (PROCESSED) JF04R0R021970AA
EPM1	EF27362	8P EH-502380 CONNE. L=180MM
EPM2	EF27711	15P EH-DF3/DF3 CONNE. L=820MM
EPU1	EF25044	6J VH-VH CONNE. L=295MM #2,4,5,6 NC
ERF	EY02262	PLUG L NIC8014N
ESD	EF27431	12P 1.0MM PITCH 501330 CONNE. L=240MM
ESL	EF27421	11P 1.0MM PITCH 501330 CONNE. L=790MM
ESP1	EF27342	4P FASTON-PA CONNE. L=660MM (#110 #187)
ESTC	EF27401	14P 1.25MM PITCH 502380-GH CONNE. L=250MM
		FERRITE CORES
ECN1A	GX00408	MAGNET-FERRITE CORE
EPU1A	GX00667	CLAMP FERRITE CORE K5B RC 26X30X13-MB1(GY)
EPU1B	GX00666	CLAMP FERRITE CORE K5C RC 16X2
NESL	GX00667	CLAMP FERRITE CORE K5B RC 26X30X13-MB1(GY)
NSP1	GX00666	CLAMP FERRITE CORE K5C RC 16X2
NSPL	GX00666	CLAMP FERRITE CORE K5C RC 16X2
NSPR	GX00666	CLAMP FERRITE CORE K5C RC 16X2
		ACCESSORIES
E01 ⚠	EV01841	POWER CORD 125V10A UL/CSA
E203	FQ00021	DRY BATTERY(R6P-AA)
N01	QR70191	H401 INST. BOOK
N01	QR70201	T501 INST. BOOK
N02	QR70211	H401 EASY GUIDE
N02	QR70221	T501 EASY GUIDE
N203	QT44791	PLASMA WARRANTY CARD CANADA
N204	QT49441	NATIONAL WARRANTY CARD 06 (EXCEPT H4011)
U01	HL02075	REMOTE CONTROL CLU-4371UG2 (H401 MODEL)
U01	HL02076	REMOTE CONTROL CLU-4372UG2 (H4011 MODEL)
U01	HL02401	REMOTE CONTROL UNIT CLU-4371A (T501 MODEL)

Chassis Boards

Panel Boards

Cable Assemblies

50" MODEL BOARD LAYOUT DIAGRAM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SDR-D H10
ADM
ADM
ADM
ADM

POWER UNIT PWB HA01912

FILTER PWB JP55131

DIGI-MAIN PWB (NEPTUNE)

MAIN DIGITAL PWB

MODEL	PART NUMBER
P50H401	UX28021
P50H4011	UX28021
P50T501	UX28022

CH 1

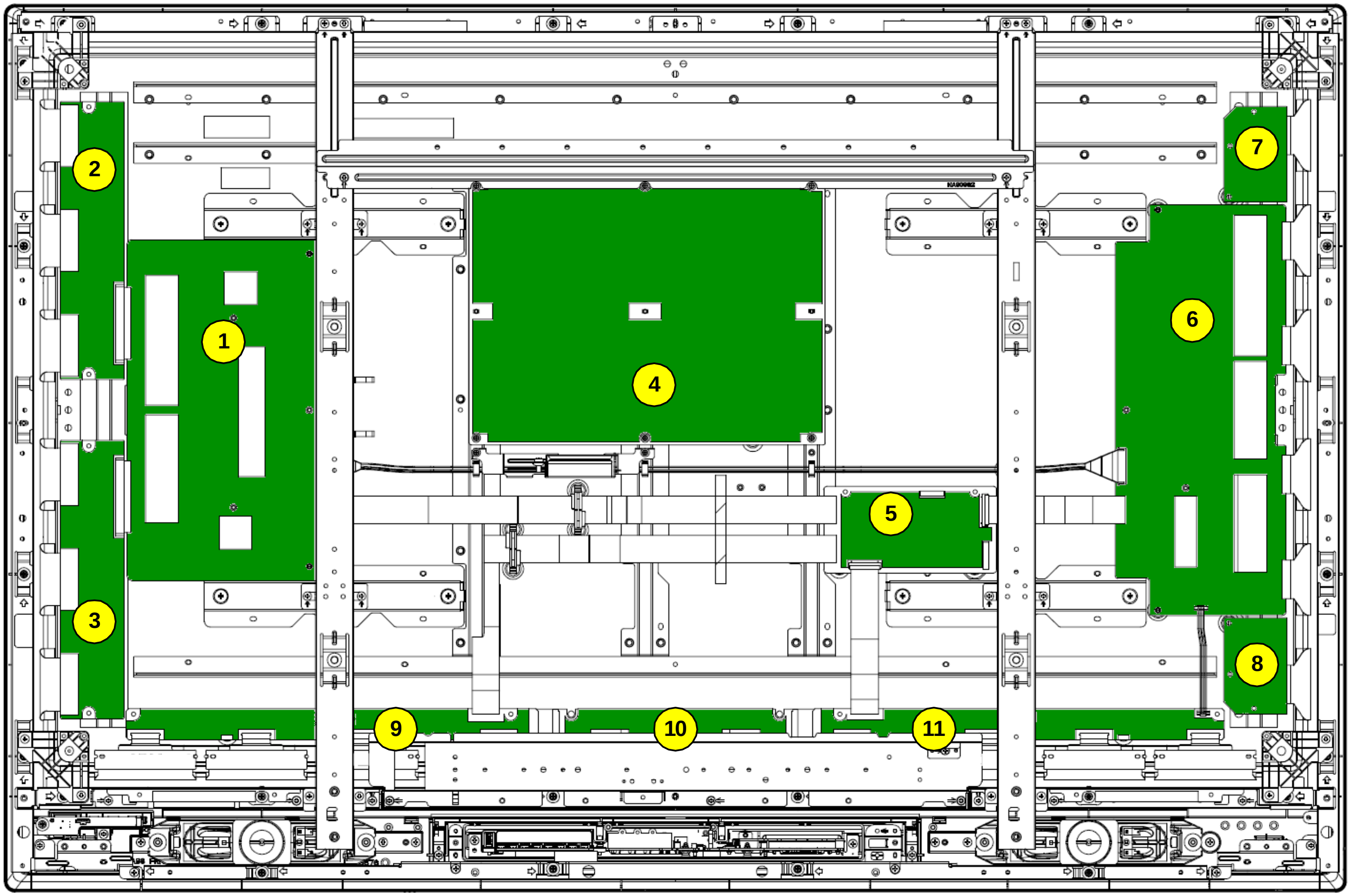
LED PWB (X480415)

CONTROL PWB (X480424)

SD PWB (X480414)

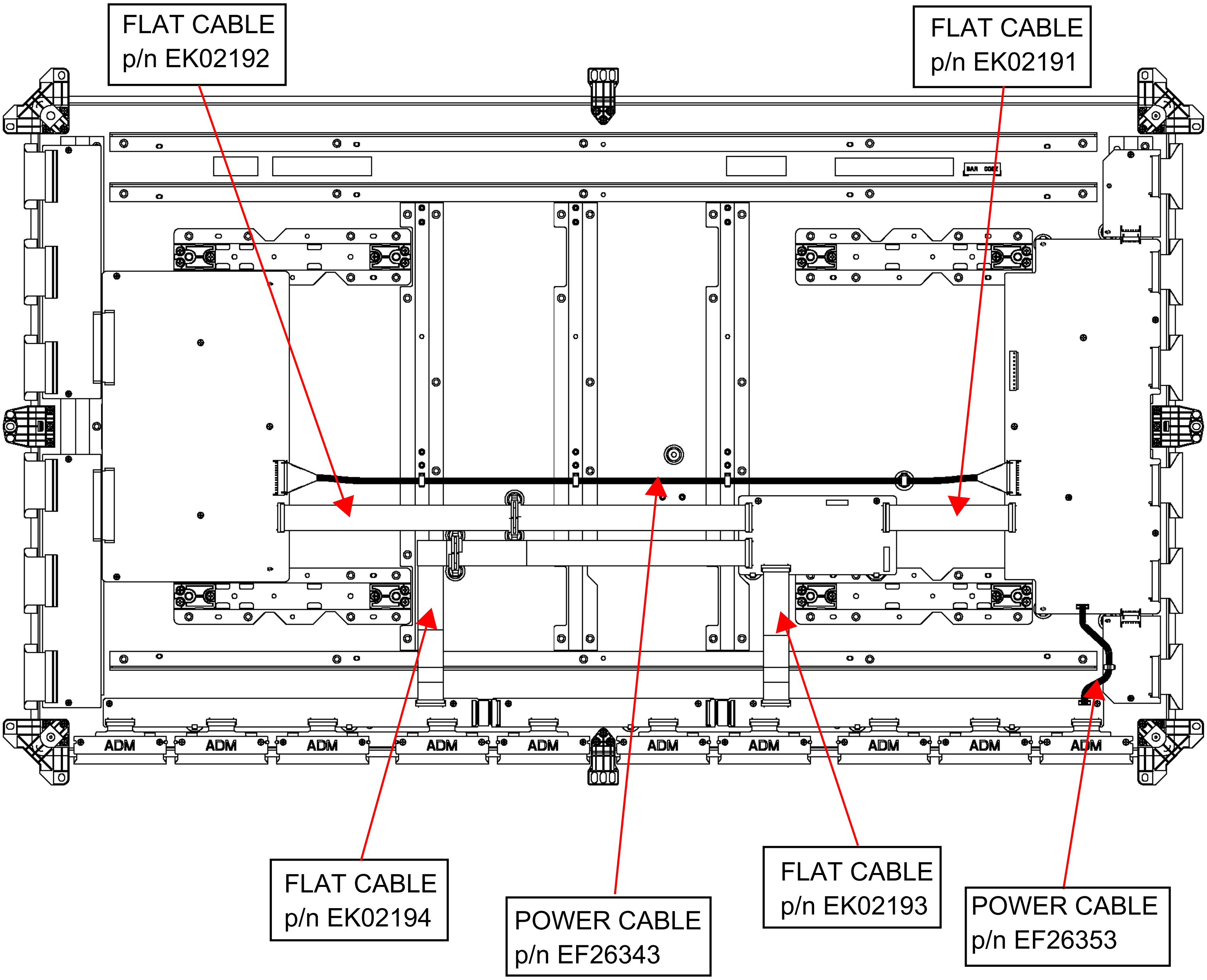
TERMINAL PWB (JP55121)

50" Plasma - Panel Boards



①	Y-SUS PWB	JP54581
②	SDR-U PWB	JP54592
③	SDR-D PWB	JP54602
④	PSU	HA01912
⑤	Logic PWB	JP54092
⑥	X-SUS PWB	JP54571
⑦	XBUS-U PWB	JP54611
⑧	XBUS-D PWB	JP54621
⑨	A-BUS-L PWB	JP54631
⑩	A-BUS-C PWB	JP54651
⑪	A-BUS-R PWB	JP54641
	PANEL	DD00891

50" Plasma - Cable Assemblies


FLAT CABLE
p/n EK02192

FLAT CABLE
p/n EK02191

FLAT CABLE
p/n EK02194

POWER CABLE
p/n EF26343

FLAT CABLE
p/n EK02193

POWER CABLE
p/n EF26353

ADM
ADM
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BAR CODE

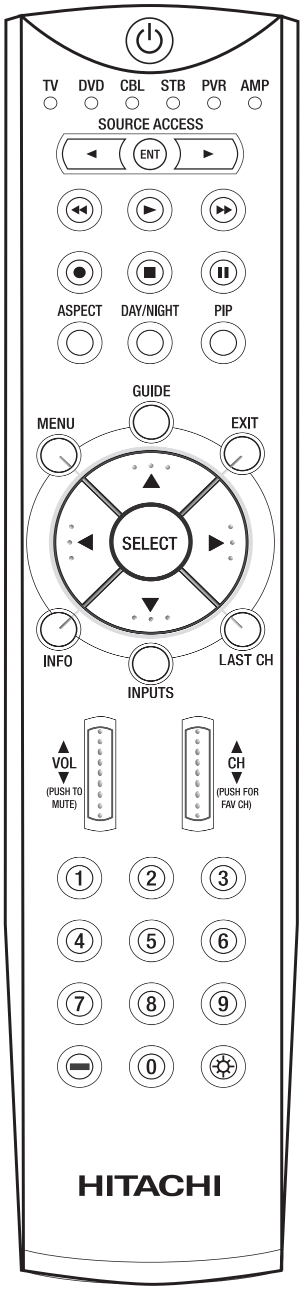
QUICK REFERENCE PARTS LIST
IC'S & UNITS

No.	Symbol	P#	Description	Function	PWB ASSY	Remarks
1	F9A1	FN00478	FUSE 51MS 100 L-U 125V 10A	FUSE	FILTER	
2	L9A1A	BZ06241	LINE FILTER TF3022H-A172Y10R0-	AC NOISE FILTER	FILTER	
3	DN01	CC01871R	LIGHT EMITTING DIODE	RED/ORANGE LED	LED	
4	DN02	CC01863R	SML012BC4T	BLUE LED	LED	
5	DN03	CC01872R	LIGHT EMITTING DIODE	RED/ORANGE LED	LED	
6	HN01	CZ01371U	INFRARED DETECTING UNIT(GP1UE281RK0VF)	IR RECEIVER	LED	
7	IN01	CK55475R	1GATE LOGIC IC (TC7SZ14FU)	SCHMITT INVERTER	LED	
8	IH01	CK53582R	S-24CS02AFT-TB-G	EEPROM	SD	
9	IH04	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC1G126DCK)	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SD	
10	IH05	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC1G126DCK)	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SD	
11	IQ01	CK53741R	TC7MBL3245AFK	OCTAL BUS SWITCH	SD	
12	IQ02	CK37216R	MONO IC TK11133CSCL	3.3 V VOLTAGE REGULATOR W ON/OFF SW	SD	
13	IQ03	CK55511R	1G LOGIC IC (TC7SG17FU)	CLOCK BUFFER	SD	
14	JWE1	EY01772R	SD MEMORY CARD 500998-0900	MEMORY CARD JACK	SD	
15	HL01	CZ01391	ANALOG MONOLITHIC IC (GP1FSV51TK0F)	OPTICAL MINI JACK FOR DIGITAL AUDIO	TERMINAL	
16	I001	CK53531U	R2S11008FP	AUDIO/VIDEO SELECTOR	TERMINAL	
17	I002	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
18	I003	CK51331R	TK11100CS	ADJUSTABLE POSITIVE LOW DROPOUT REGULATOR IC	TERMINAL	
19	IL01	CK50961R	SN74CB3T3306DCUR	DUAL FET BUS SWITCH	TERMINAL	
20	IP03	CK52481R	TK73400TCB-G	6.2 VOLTAGE REGULATOR FOR TV / VTR USE	TERMINAL	
21	IT03	CK53612R	TC7PA53FU	2 CHANNEL MULTIPLEXER/DEMULTIPLEXER	TERMINAL	
22	IT05	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
23	IT06	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
24	IT07	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
25	IT09	CK51151R	UPC3221GV	5 V AGC AMPLIFIER	TERMINAL	
26	IY03	CK50027R	DIGITAL MONOLITHIC IC (MAX202IPW)	DUAL RS-232 LINE DRIVER/REC W/+-15KV ESD PROTEC	TERMINAL	
27	UT01	HC00701	ENGD6305	ANALOG/DIGITAL TUNER	TERMINAL	

TABLE OF CONTENTS

Service Modes available to the technician (via remote only)

DW1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CBL
STB
PVR
AMP
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ASPECT
DAY/NIGHT
PIP
GUIDE
MENU
EXIT
SELECT
INFO
LAST CH
INPUTS
VOL
(PUSH TO MUTE)
CH
(PUSH FOR FAV CH)
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2
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9
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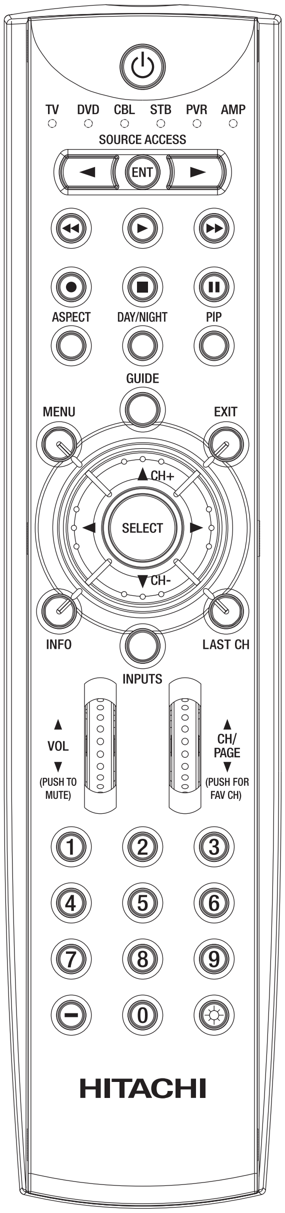
HITACHI

DW2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STB
PVR
AMP
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PIP
GUIDE
MENU
EXIT
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CH-
INFO
LAST CH
INPUTS
VOL
(PUSH TO MUTE)
CH/ PAGE
(PUSH FOR FAV CH)
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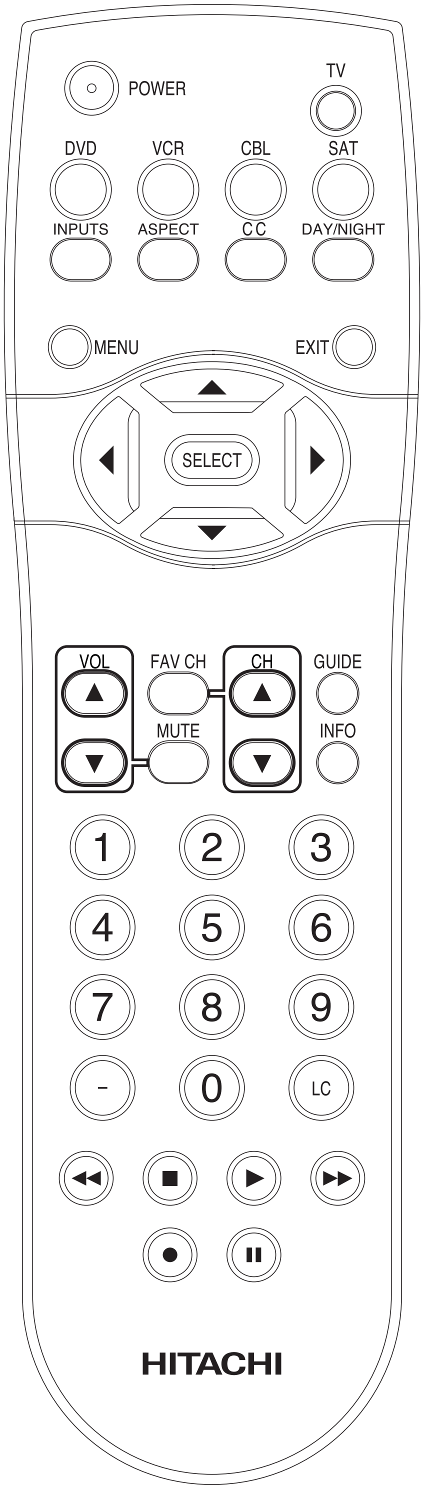
HITACHI

DW3 - H models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9
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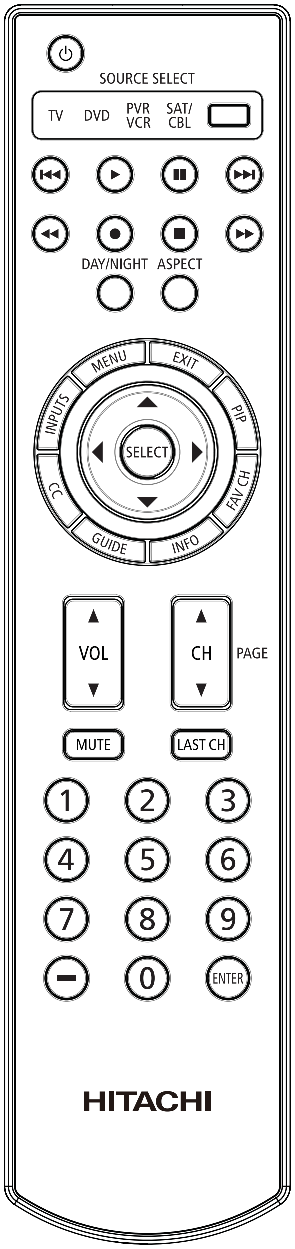
LC
HITACHI

DW3 - T models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TV
DVD
PVR VCR
SAT/ CBL
DAY/NIGHT
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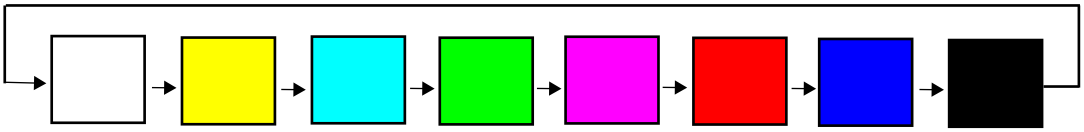
MENU
EXIT
PIP
FAV CH
INFO
GUIDE
CC
INPUTS
SELECT
VOL
CH
PAGE
MUTE
LAST CH
1
2
3
4
5
6
7
8
9
0
ENTER
HITACHI

MENU + MENU + MENU + 8 + SELECT = Service Adj Mode (I2C Adjust)
MENU + MENU + MENU + 9 + SELECT = Panel Test Mode (see below)



CH 3

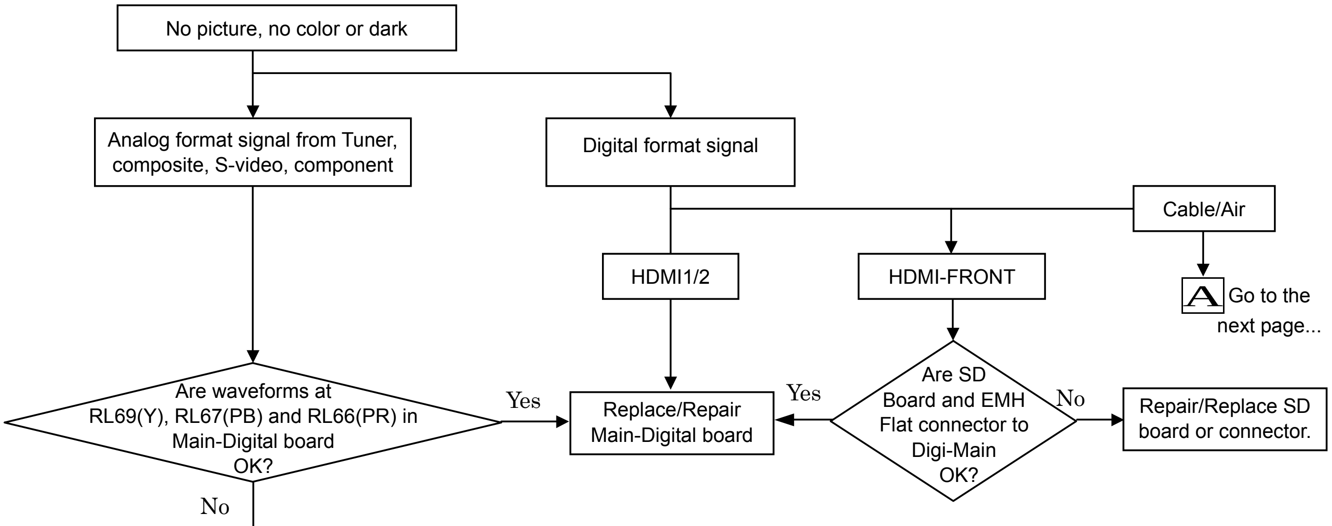
To Index

IN DEPTH TROUBLESHOOTING OF DIGI-MAIN RELATED TO VIDEO PROBLEMS

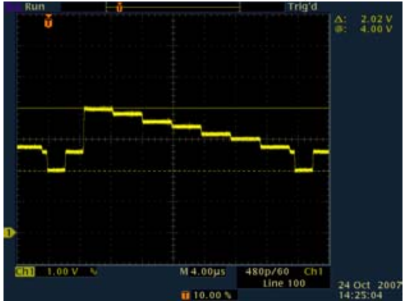
Trouble-Shooting Guide for video failure.

NOTES: Remember! Your first checking instruments are your senses; see, smell, touch, hear before following the next troubleshooting guides. Find additional troubleshooting information from the website: www.hitachiserviceusa.com.

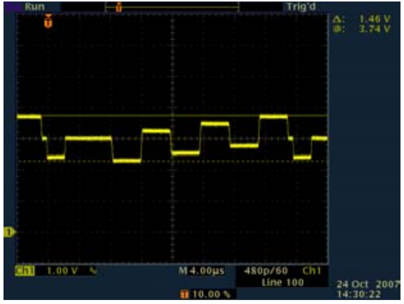
NOTE: Waveforms were taken with a 480p YPbPr Color Bar signal.


No picture, no color or dark
Analog format signal from Tuner, composite, S-video, component
Digital format signal
Cable/Air
HDMI1/2
HDMI-FRONT
A Go to the next page...
Are waveforms at RL69(Y), RL67(PB) and RL66(PR) in Main-Digital board OK?
Yes
Replace/Repair Main-Digital board
Yes
Are SD Board and EMH Flat connector to Digi-Main OK?
No
Repair/Replace SD board or connector.
No

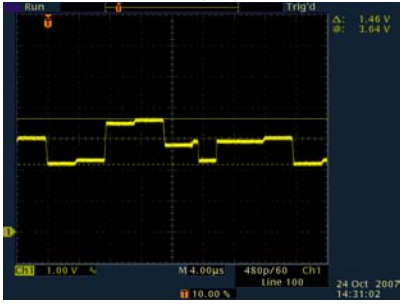
RL69 (Y)

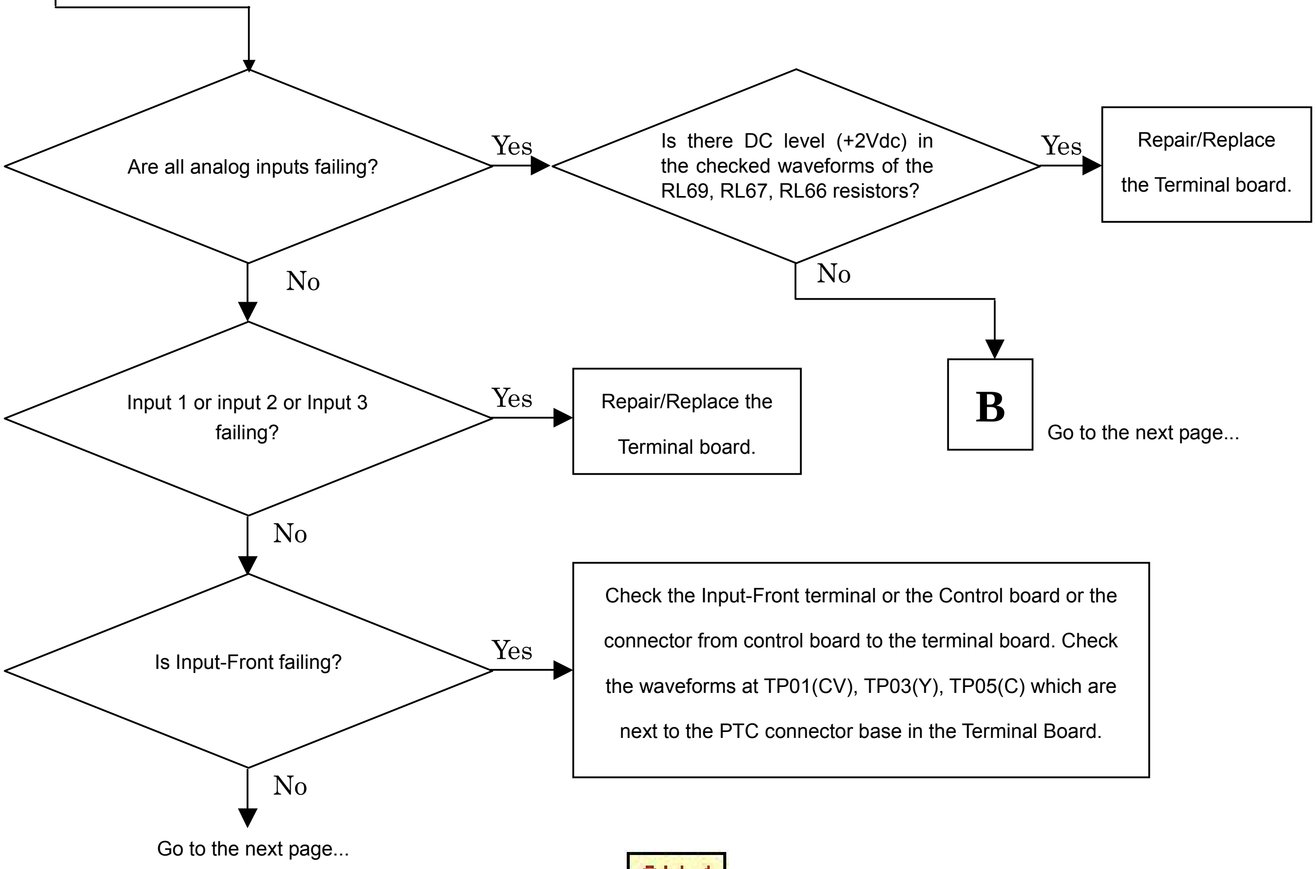

Run
Trig'd
Δ: 2.02 V
@: 4.00 V
Ch1 1.00 V
M 4.00µs
480p/60 Ch1
Line 100
10.00 %
24 Oct 2007
14:25:04

RL67 (PB)


Run
Trig'd
Δ: 1.46 V
@: 3.74 V
Ch1 1.00 V
M 4.00µs
480p/60 Ch1
Line 100
10.00 %
24 Oct 2007
14:30:22

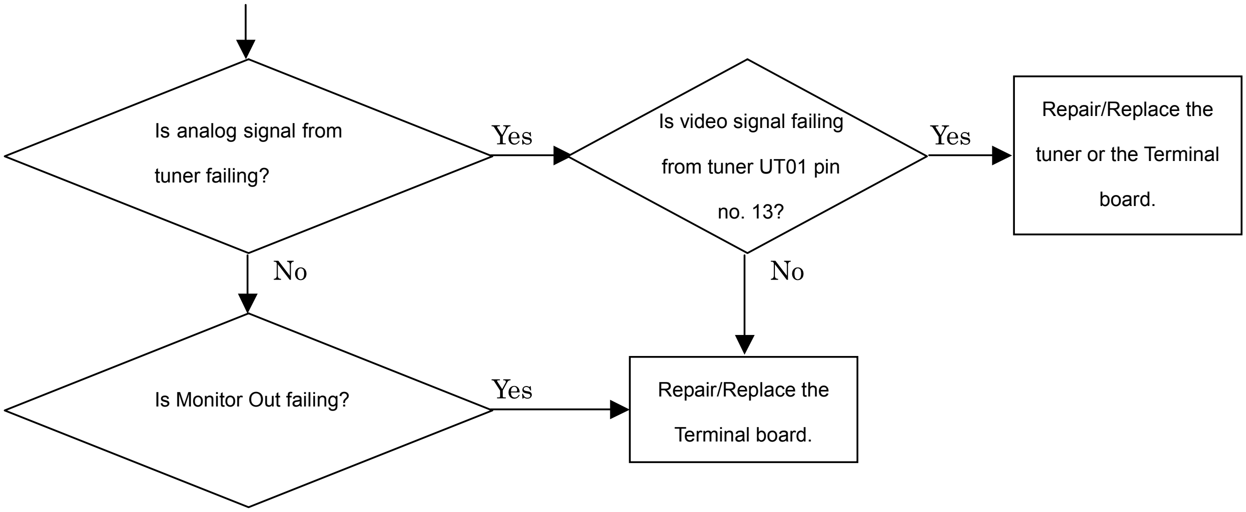
RL66 (PR)


Run
Trig'd
Δ: 1.46 V
@: 3.64 V
Ch1 1.00 V
M 4.00µs
480p/60 Ch1
Line 100
10.00 %
24 Oct 2007
14:31:02


Are all analog inputs failing?
Yes
Is there DC level (+2Vdc) in the checked waveforms of the RL69, RL67, RL66 resistors?
Yes
Repair/Replace the Terminal board.
No
No
B
Go to the next page...
Input 1 or input 2 or Input 3 failing?
Yes
Repair/Replace the Terminal board.
No
Is Input-Front failing?
Yes
Check the Input-Front terminal or the Control board or the connector from control board to the terminal board. Check the waveforms at TP01(CV), TP03(Y), TP05(C) which are next to the PTC connector base in the Terminal Board.
No
Go to the next page...

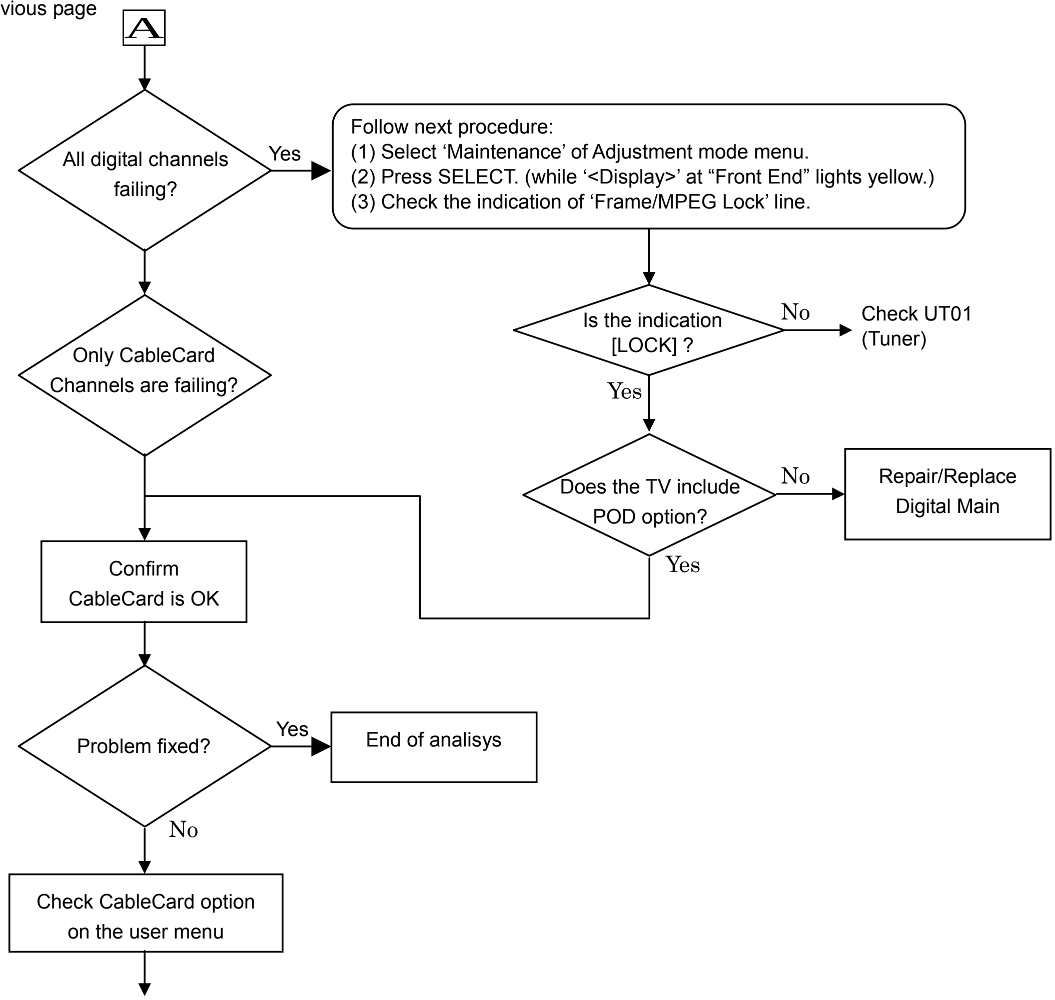
To Index

…from the previous page


Is analog signal from tuner failing?
Yes
Is video signal failing from tuner UT01 pin no. 13?
Yes
Repair/Replace the tuner or the Terminal board.
No
No
Is Monitor Out failing?
Yes
Repair/Replace the Terminal board.

...from previous page

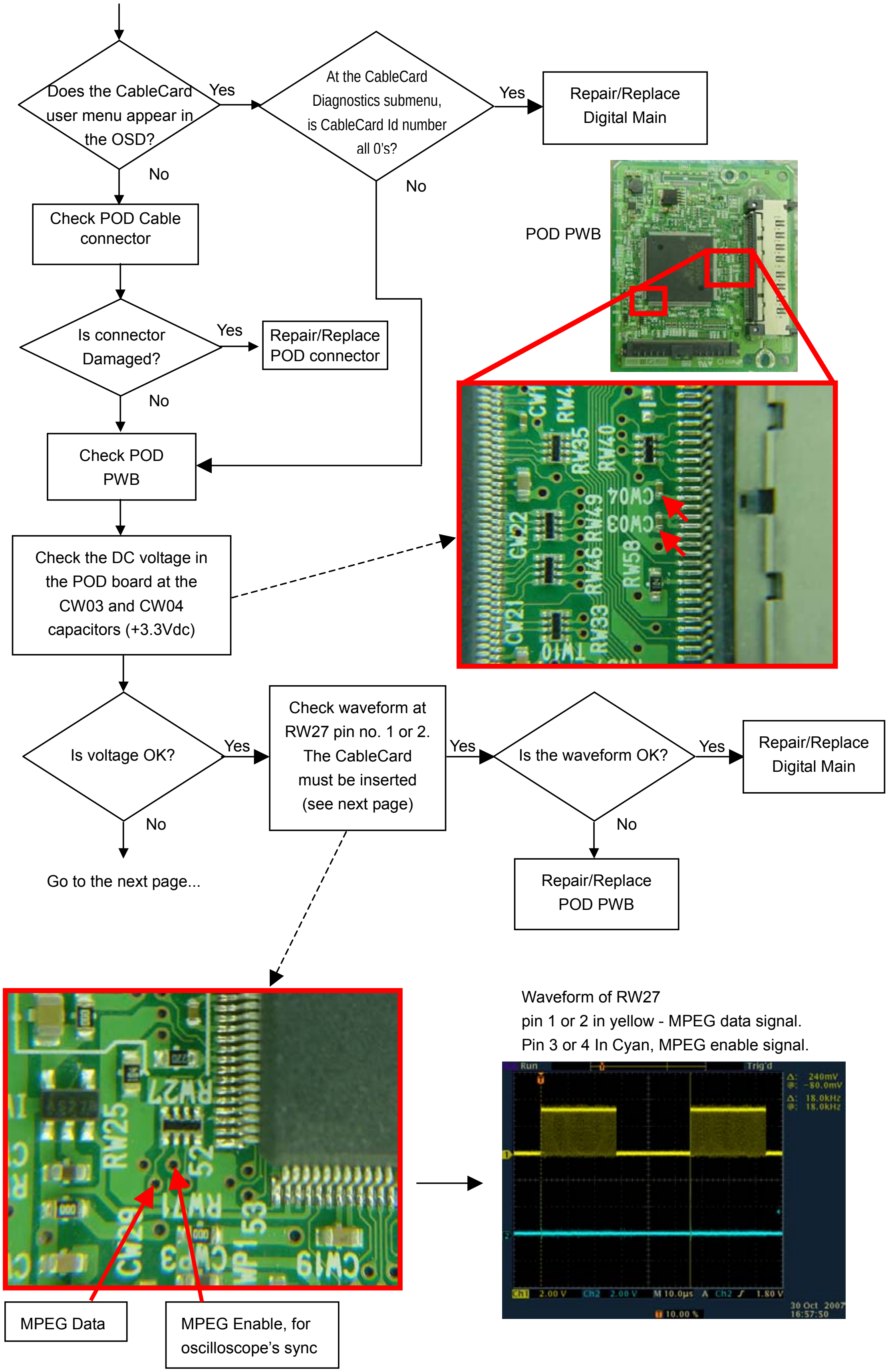
Only for models with POD, X and V models


A
All digital channels failing?
Yes
Follow next procedure:
(1) Select ‘Maintenance’ of Adjustment mode menu.
(2) Press SELECT. (while ‘<Display>’ at “Front End” lights yellow.)
(3) Check the indication of ‘Frame/MPEG Lock’ line.
Is the indication [LOCK] ?
No
Check UT01 (Tuner)
Yes
Only CableCard Channels are failing?
Does the TV include POD option?
No
Repair/Replace Digital Main
Yes
Confirm CableCard is OK
Problem fixed?
Yes
End of analisys
No
Check CableCard option on the user menu

NOTE:
CableCard must be inserted

Continues on the next page…

…continued from the previous page


Does the CableCard user menu appear in the OSD?
Yes
At the CableCard Diagnostics submenu, is CableCard Id number all 0's?
Yes
Repair/Replace Digital Main
No
No
Check POD Cable connector
POD PWB
Is connector Damaged?
Yes
Repair/Replace POD connector
No
Check POD PWB
Check the DC voltage in the POD board at the CW03 and CW04 capacitors (+3.3Vdc)
CW04
CW03
CW22
CW21
RW35
RW40
RW49
RW46
RW58
RW33
Is voltage OK?
Yes
Check waveform at RW27 pin no. 1 or 2. The CableCard must be inserted (see next page)
Yes
Is the waveform OK?
Yes
Repair/Replace Digital Main
No
No
Go to the next page...
Repair/Replace POD PWB
RW27
RW25
CW19
MPEG Data
MPEG Enable, for oscilloscope's sync
Run
Trig'd
Δ: 240mV
@: -80.0mV
Δ: 18.0kHz
@: 18.0kHz
Ch1 2.00 V
Ch2 2.00 V
M 10.0µs
A Ch2 1.80 V
10.00 %
30 Oct 2007
16:57:50

Waveform of RW27
pin 1 or 2 in yellow - MPEG data signal.
Pin 3 or 4 In Cyan, MPEG enable signal.

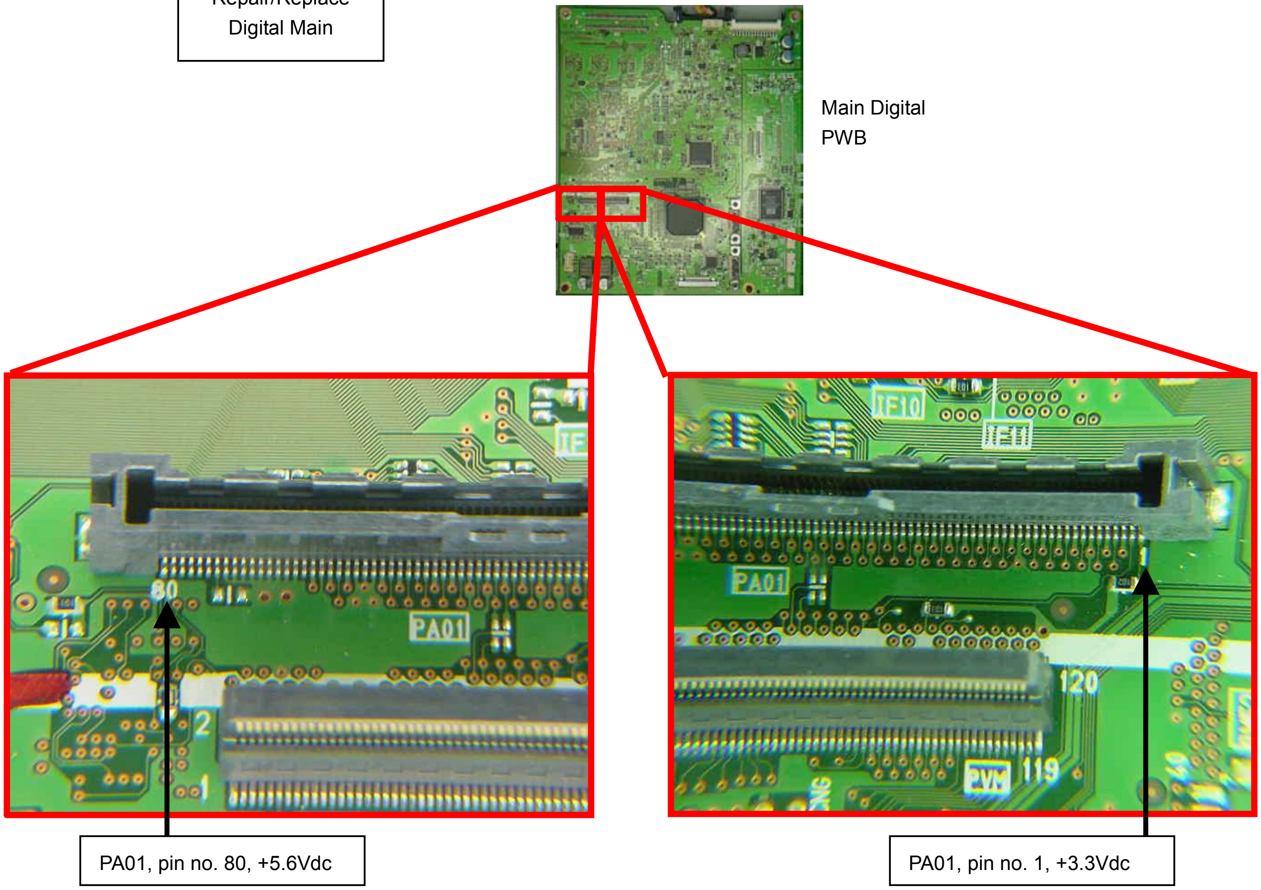
…from the previous page

Unplug EMP0 connector from the POD-PW01 terminal and check the voltages in the PA01 connector at the main digital board pin no. 1 (+3.3Vdc) and pin no 80 (+5.6Vdc).

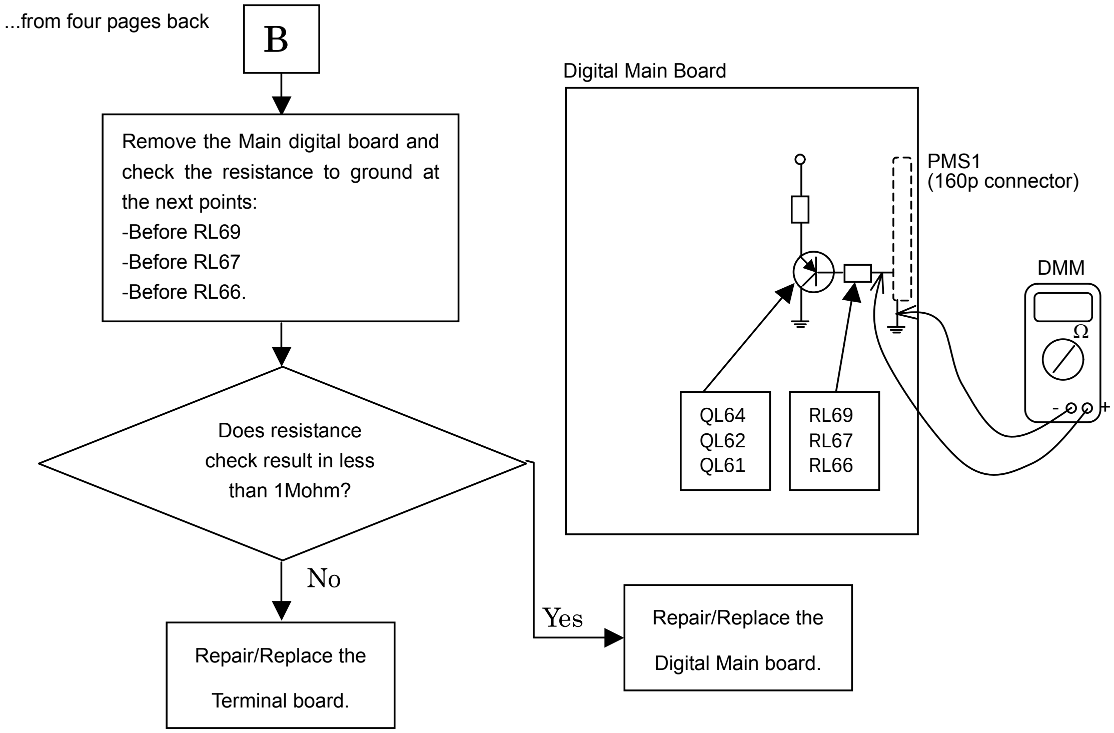
Are any of the voltages OK?

Yes → Repair/Replace POD PWB.

No → Repair/Replace Digital Main


Main Digital PWB
80
PA01
2
1
IF10
IF11
PA01
120
119
PA01, pin no. 80, +5.6Vdc
PA01, pin no. 1, +3.3Vdc

...from four pages back



Remove the Main digital board and check the resistance to ground at the next points:
-Before RL69
-Before RL67
-Before RL66.

Does resistance check result in less than 1Mohm?

No: Repair/Replace the Terminal board.

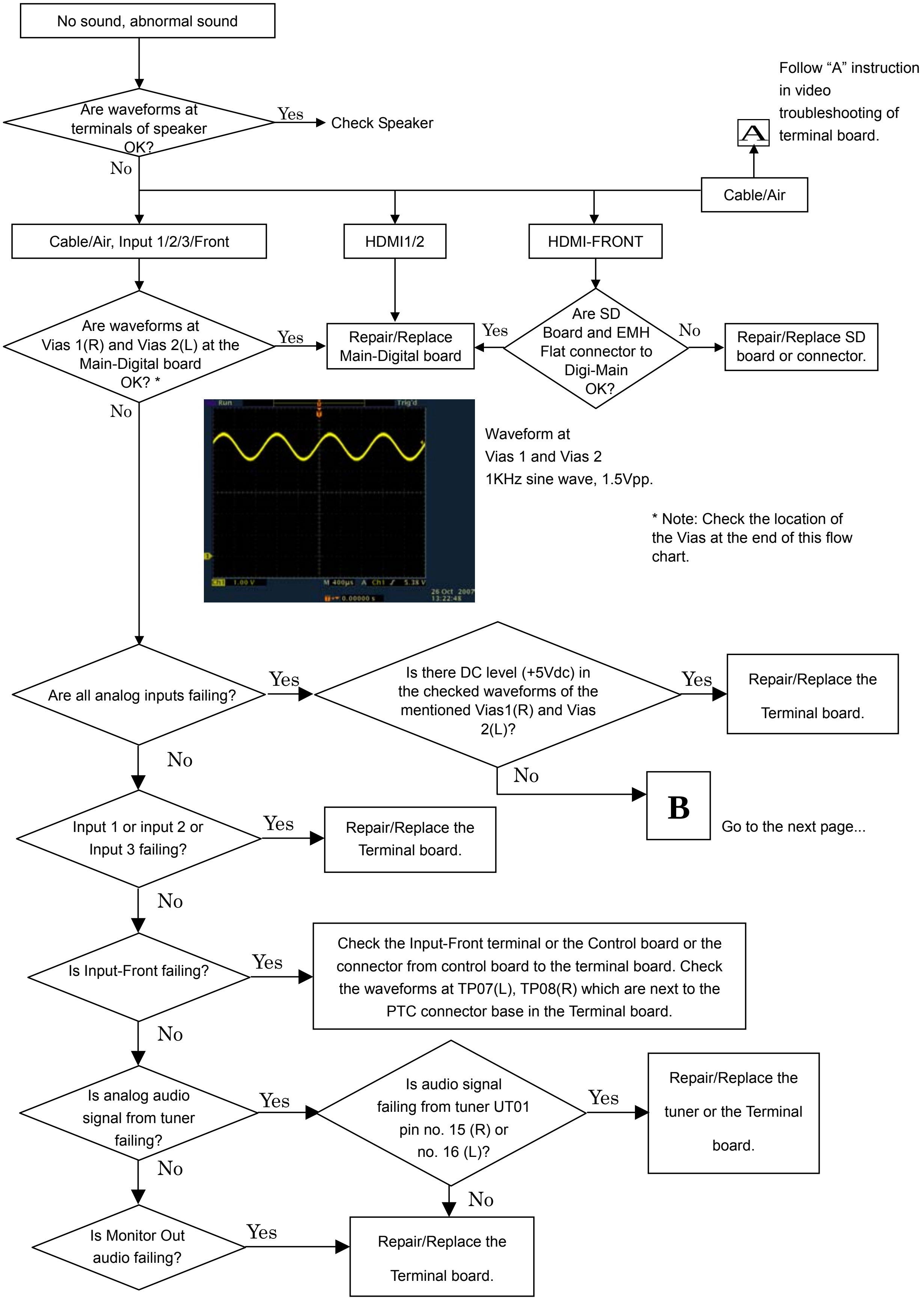
Yes: Repair/Replace the Digital Main board.

B
No
Yes
Digital Main Board
PMS1
(160p connector)
DMM
Ω
-
+
QL64
QL62
QL61
RL69
RL67
RL66

IN DEPTH TROUBLESHOOTING OF DIGI-MAIN RELATED TO AUDIO PROBLEMS

Trouble-shooting guide for audio failure.

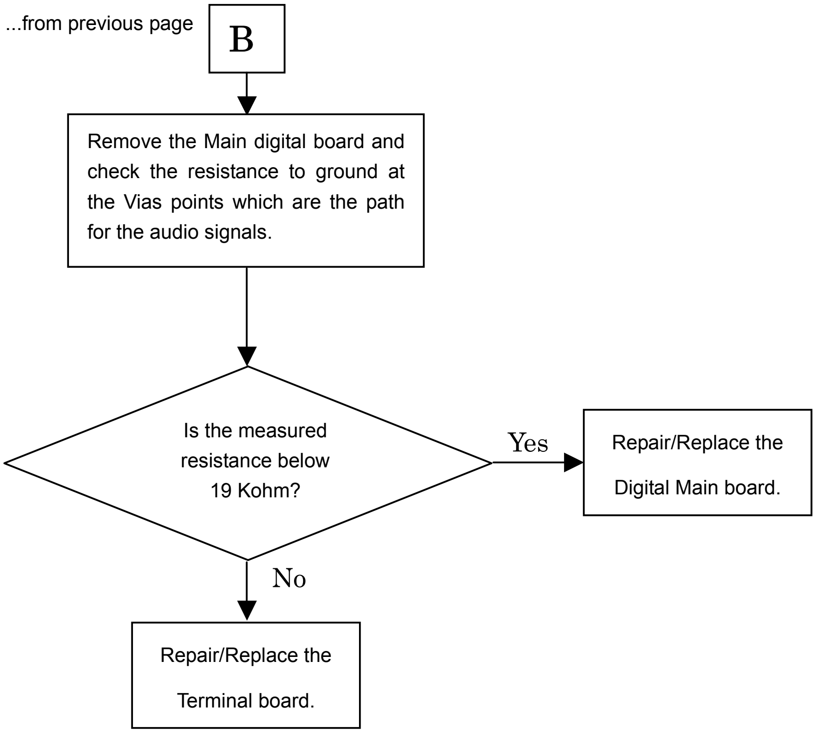
To Index


No sound, abnormal sound
Are waveforms at terminals of speaker OK?
Yes
Check Speaker
No
Follow “A” instruction in video troubleshooting of terminal board.
A
Cable/Air
Cable/Air, Input 1/2/3/Front
HDMI1/2
HDMI-FRONT
Are waveforms at Vias 1(R) and Vias 2(L) at the Main-Digital board OK? *
Yes
Repair/Replace Main-Digital board
Yes
Are SD Board and EMH Flat connector to Digi-Main OK?
No
Repair/Replace SD board or connector.
No
Are all analog inputs failing?
Yes
Is there DC level (+5Vdc) in the checked waveforms of the mentioned Vias1(R) and Vias 2(L)?
Yes
Repair/Replace the Terminal board.
No
B
Go to the next page...
No
Input 1 or input 2 or Input 3 failing?
Yes
Repair/Replace the Terminal board.
No
Is Input-Front failing?
Yes
Check the Input-Front terminal or the Control board or the connector from control board to the terminal board. Check the waveforms at TP07(L), TP08(R) which are next to the PTC connector base in the Terminal board.
No
Is analog audio signal from tuner failing?
Yes
Is audio signal failing from tuner UT01 pin no. 15 (R) or no. 16 (L)?
Yes
Repair/Replace the tuner or the Terminal board.
No
No
Is Monitor Out audio failing?
Yes
Repair/Replace the Terminal board.

Waveform at
Vias 1 and Vias 2
1KHz sine wave, 1.5Vpp.

* Note: Check the location of the Vias at the end of this flow chart.

CH 4


...from previous page
B
Yes
No

Remove the Main digital board and check the resistance to ground at the Vias points which are the path for the audio signals.

Is the measured resistance below 19 Kohm?

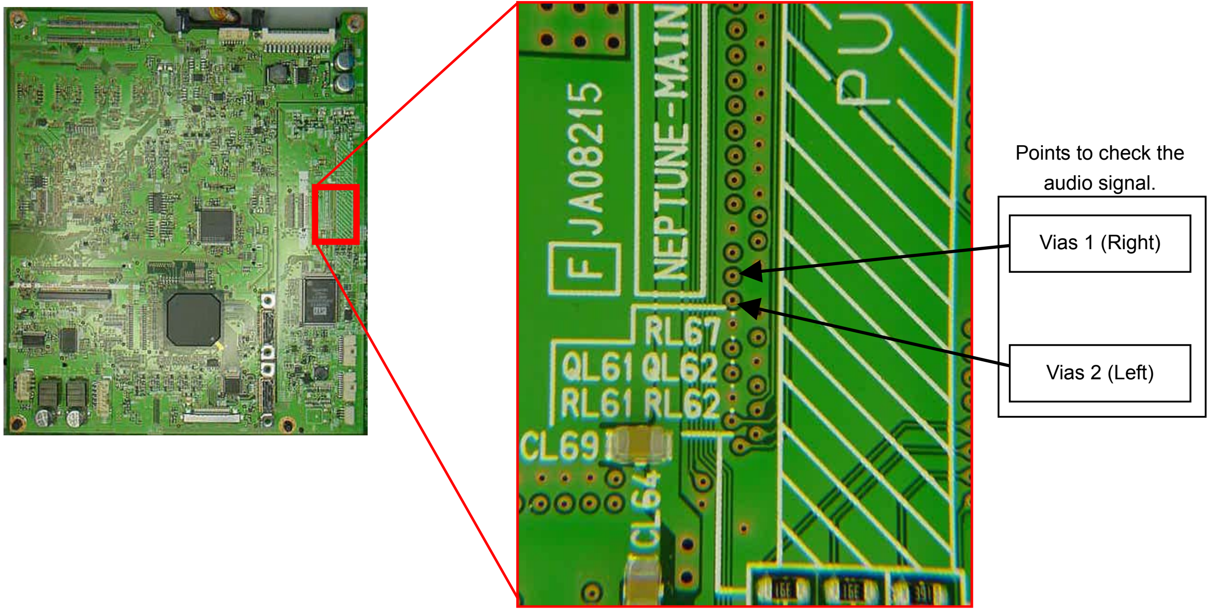
Repair/Replace the Digital Main board.

Repair/Replace the Terminal board.

The next pictures show the location of the Vias in the Main-Digital Board.

These Vias are the paths for the audio signals. Check the waveforms and/or the resistance at these Vias.

Digital Main Board,


F JA08215
NEPTUNE-MAIN
RL67
QL61 QL62
RL61 RL62
CL69
CL64
Points to check the audio signal.
Vias 1 (Right)
Vias 2 (Left)

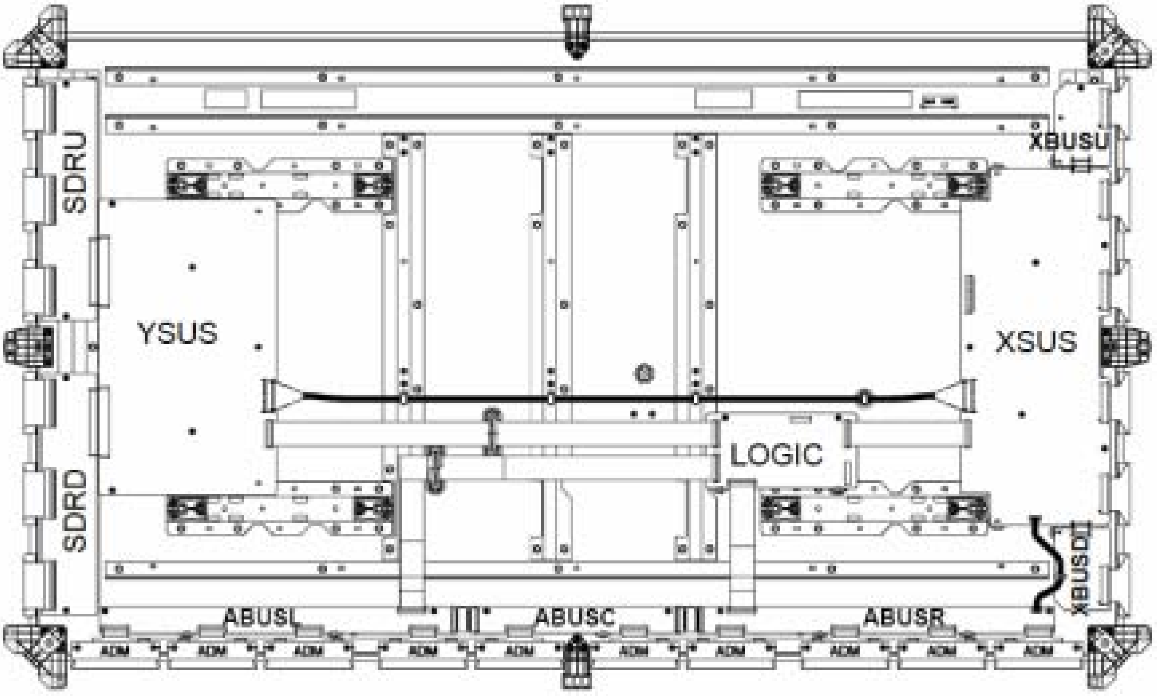
CH 5

3. NAME and FUNCTION of Each Parts

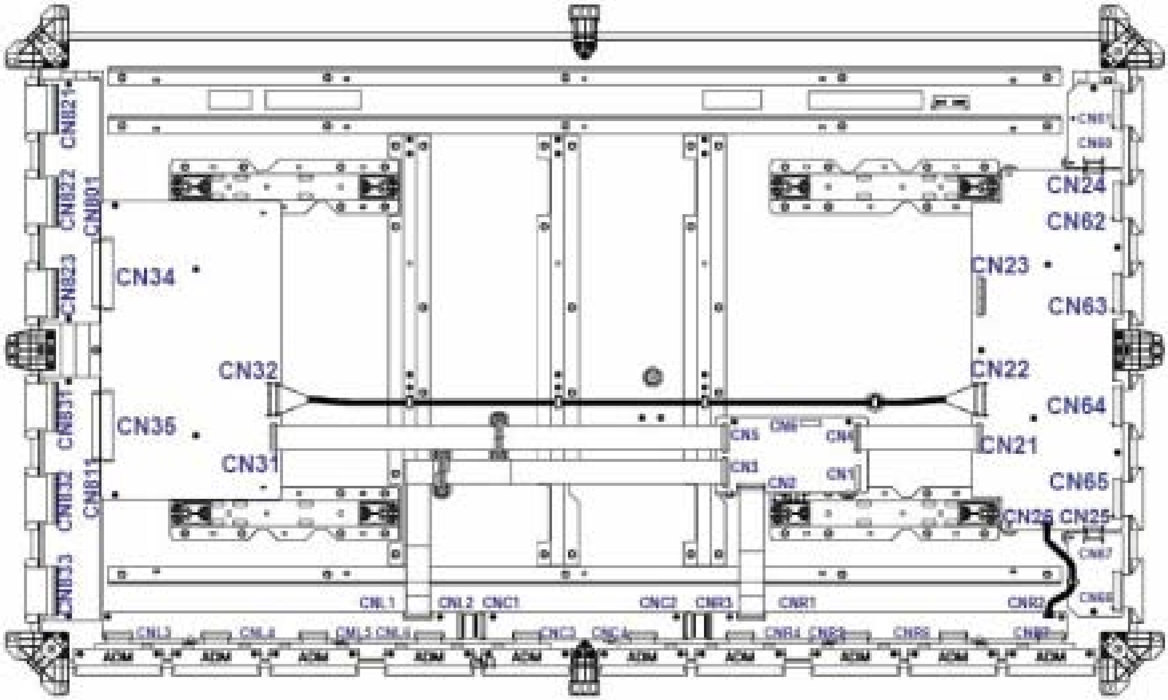
To Index

3.1 CONFIGURATION

3.1.1 BOARDS CONFIGURATION (BOTH 50AE1 AND 50AE1V)

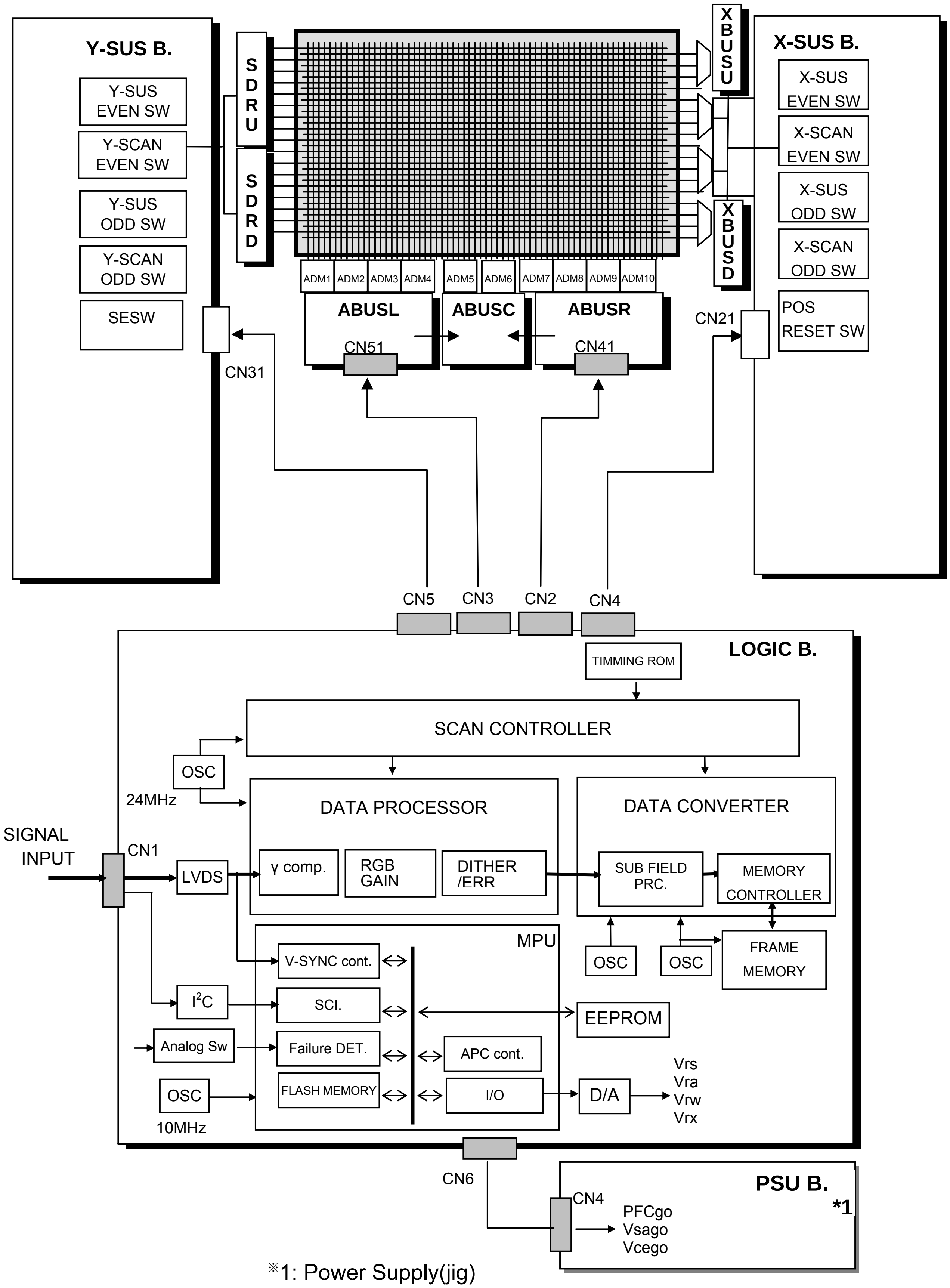

SDRU
XBUSU
YSUS
XSUS
LOGIC
SDRD
XBUSD
ABUSL
ABUSC
ABUSR
ADM

3.1.2 CONNECTORS CONFIGURATION


CN821
CN822
CN801
CN823
CN34
CN32
CN35
CN31
CN831
CN832
CN811
CN833
CN61
CN60
CN24
CN62
CN23
CN63
CN22
CN64
CN21
CN65
CN26
CN25
CN67
CN66
CN5
CN6
CN4
CN3
CN2
CN1
CNL1
CNL2
CNC1
CNC2
CNR3
CNR1
CNR2
CNL3
CNL4
CNL5
CNL6
CNC3
CNC4
CNR4
CNR5
CNR6
ADM

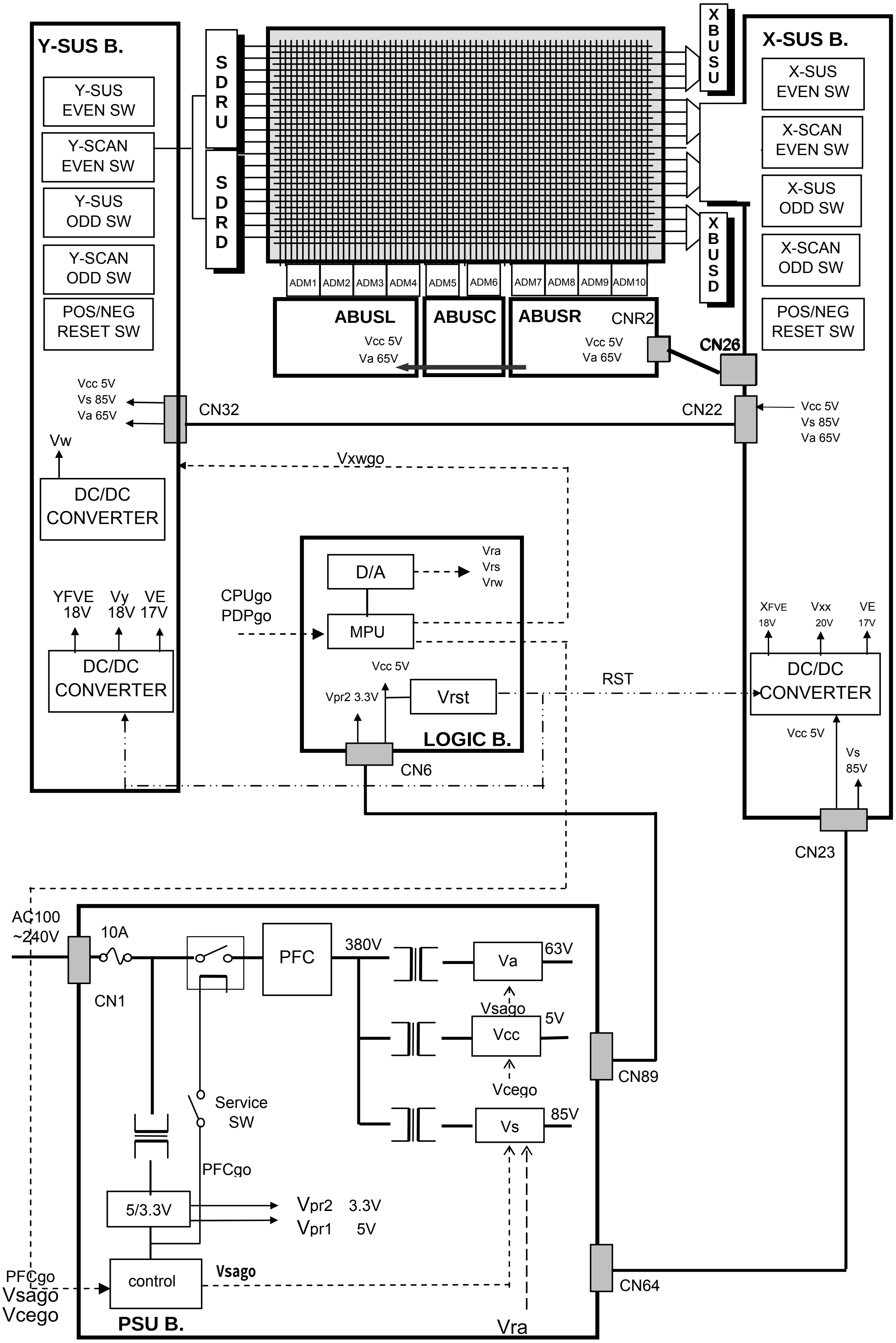
3.2 Block Diagram

3.2.1 Signal Diagrams


Y-SUS B.
Y-SUS EVEN SW
Y-SCAN EVEN SW
Y-SUS ODD SW
Y-SCAN ODD SW
SESW
CN31
SDRU
SDRD
ADM1
ADM2
ADM3
ADM4
ADM5
ADM6
ADM7
ADM8
ADM9
ADM10
ABUSL
ABUSC
ABUSR
CN51
CN41
XBUSU
XBUSD
X-SUS B.
X-SUS EVEN SW
X-SCAN EVEN SW
X-SUS ODD SW
X-SCAN ODD SW
POS RESET SW
CN21
CN5
CN3
CN2
CN4
LOGIC B.
TIMMING ROM
SCAN CONTROLLER
OSC
24MHz
DATA PROCESSOR
DATA CONVERTER
SIGNAL INPUT
CN1
LVDS
γ comp.
RGB GAIN
DITHER /ERR
SUB FIELD PRC.
MEMORY CONTROLLER
MPU
V-SYNC cont.
OSC
OSC
FRAME MEMORY
I²C
SCI.
EEPROM
Analog Sw
Failure DET.
APC cont.
OSC
FLASH MEMORY
I/O
D/A
Vrs
Vra
Vrw
Vrx
10MHz
CN6
PSU B.
*1
CN4
PFCgo
Vsago
Vcego

※1: Power Supply(jig)

3.2.2 Power Supply Diagram


Y-SUS B.
Y-SUS EVEN SW
Y-SCAN EVEN SW
Y-SUS ODD SW
Y-SCAN ODD SW
POS/NEG RESET SW
SDRU
SDRD
XBUSU
XBUSD
X-SUS B.
X-SUS EVEN SW
X-SCAN EVEN SW
X-SUS ODD SW
X-SCAN ODD SW
POS/NEG RESET SW
ADM1 ADM2 ADM3 ADM4 ADM5 ADM6 ADM7 ADM8 ADM9 ADM10
ABUSL
Vcc 5V
Va 65V
ABUSC
ABUSR
CNR2
Vcc 5V
Va 65V
CN26
Vcc 5V
Vs 85V
Va 65V
CN32
CN22
Vcc 5V
Vs 85V
Va 65V
Vw
Vxwgo
DC/DC CONVERTER
D/A
Vra
Vrs
Vrw
CPUgo
PDPgo
MPU
Vcc 5V
Vpr2 3.3V
Vrst
LOGIC B.
CN6
YFVE 18V
Vy 18V
VE 17V
DC/DC CONVERTER
RST
XFVE 18V
Vxx 20V
VE 17V
DC/DC CONVERTER
Vcc 5V
Vs 85V
CN23
AC100 ~240V
10A
CN1
PFC
380V
Va
63V
Vsago
Vcc
5V
Vcego
Vs
85V
CN89
Service SW
PFCgo
5/3.3V
Vpr2 3.3V
Vpr1 5V
control
Vsago
PFCgo
Vsago
Vcego
PSU B.
Vra
CN64

3.3 Function

3.3.1 Logic board Function

1) Data Processor	- γ adjustment(1 / 2.2 / 2.4 / 2.6 / 2.8) - NTSC/EBU format(Color matrix) Switch - RGB gain Control(White balance adjustment, Amplitude limitation) - Error Diffusion Technology(Grayscale adjustment) - Dither(Grayscale adjustment) - Burn-in Pattern generation - Streaking adjustment
2) Data Converter	- Quasi out-line adjustment (luminous pattern control)
3)Scan Controller	- Address driver control signal generator (ADM) - scan driver control signal generator (SDM) - X / Y sustain control signal generator
4) Waveform ROM	- Waveform Pattern for drive / Timing memory
5) MPU	- Synchronous detection - System control - Driving voltage(Va, Vs, Vw) minor adjustment - Abnormal watch (breakdown detection)/abnormal processing - Is(sustain) current control (sustain pulse control) - Ia(address) current control (sub-field control / sustain pulse control) - External communication control - Flash memory (firmware)
6）EEPROM	- Control parameter memory - The accumulation energizing time (Every hour). - Abnormal status memory (16 careers)

Function of X-SUS Board

1) DC/DC power supply block	- Va (+63V) -> Vx(-30V) / Vq (-55V) - Vcc (+5V) -> Vex (+17V) / XFve (+18V, floating)
2) X switching block	- Switch circuit for sustain period - Switch circuit for address period - Switch circuit for reset period
3）Current detector block	- Isx (sustain) current detection - Ia (address) current detection
4) Voltage detector block	- Vs (sustain) voltage detection - Va (address) voltage detection

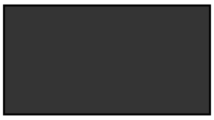
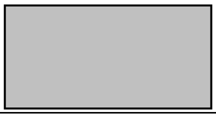
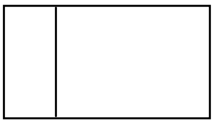
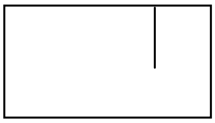
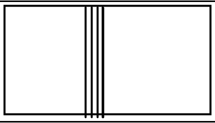
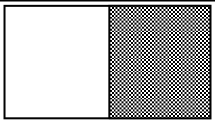
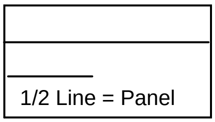
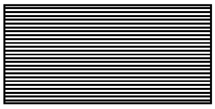
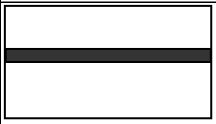
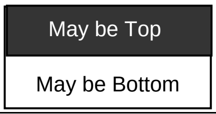
FUNCTION OF Y-SUS BOARD

1) DC/DC power supply block	- Vcc (+5V) -> Ve (+17V) / YFve (+18V, floating) - Vs (+85V) -> Vw (200V)
2) Y switching block	- Switching for sustain period - Switching for address period - Switching for reset period

TROUBLESHOOTING THE PANEL

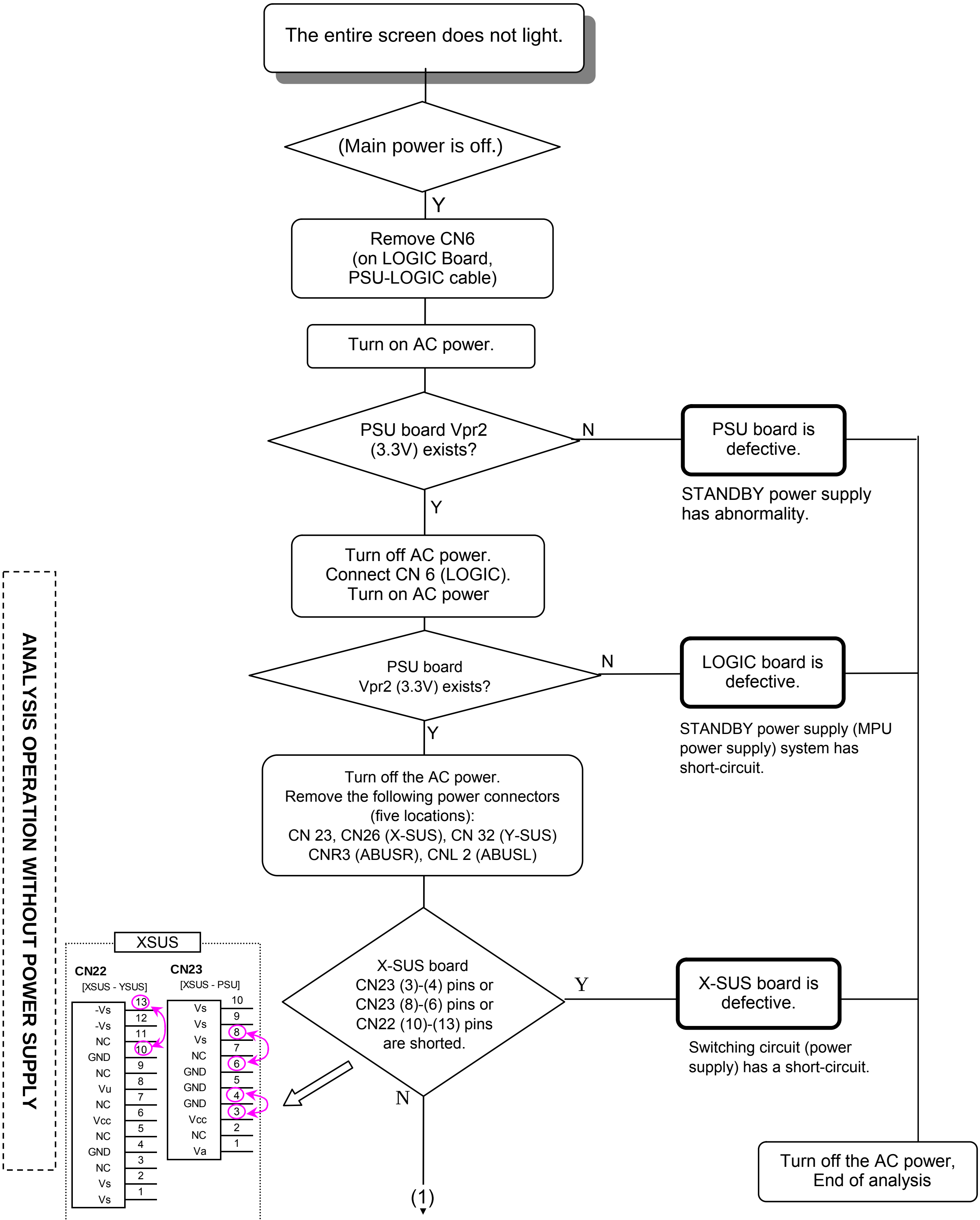
P50H401

4.5 Fault Symptom

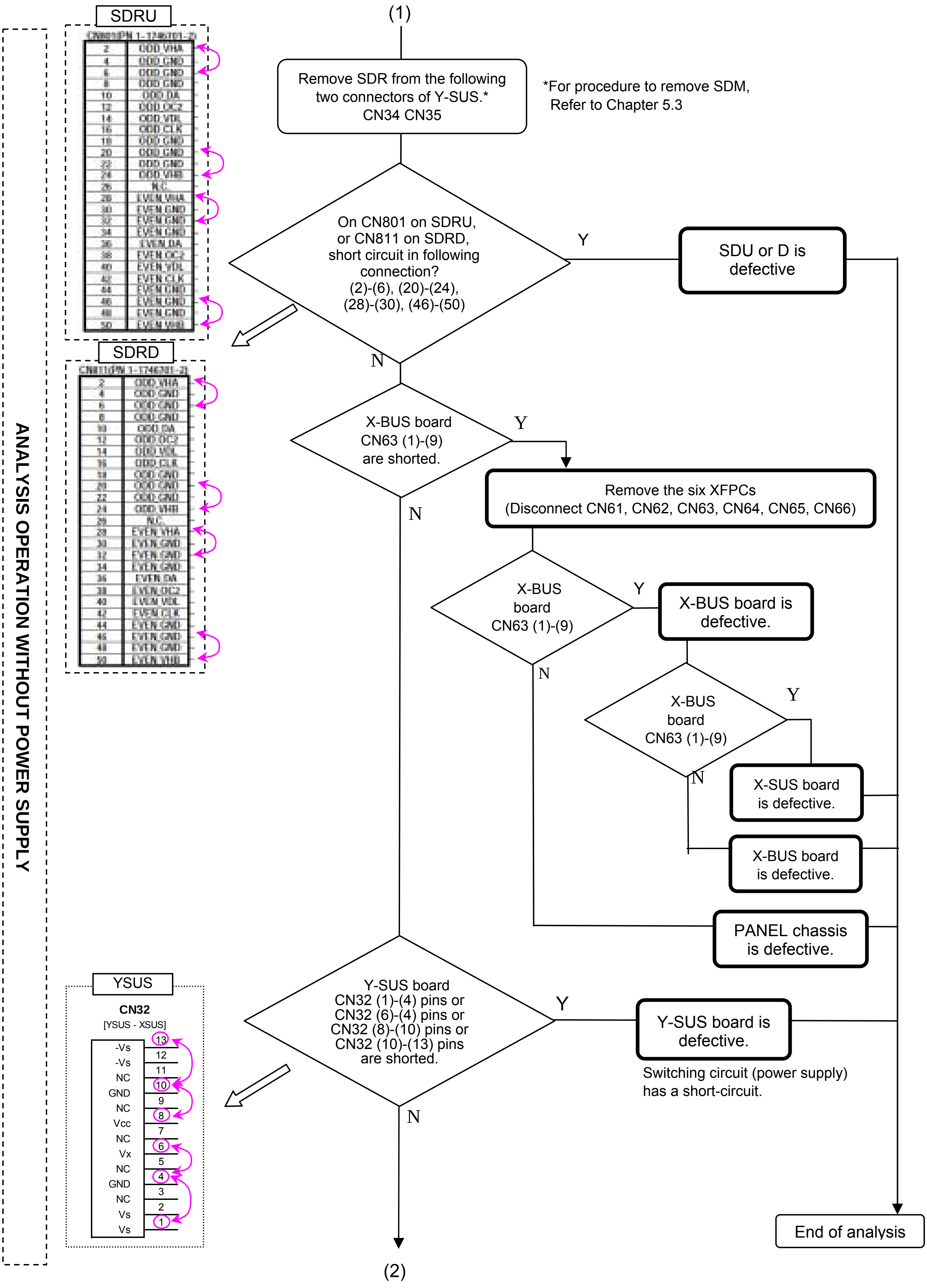
No	Fault contents	Fault status		Suspected fault location	Analysis procedure and measure
1	Entire screen does not light (No Picture)	After momentarily lighting, the screen becomes black immediately or after a few seconds. (Main power is turned off.)		See Troubleshooting Pg. 58 & 127.	Replace defective PCB See "No Picture" Troubleshooting Flowchart Pg. 58
2		Screen does not show any picture but lights dimly.		LOGIC	Replace LOGIC board
3	Vertical Line	Single vertical line		LOGIC PANEL	See Vertical Line Troubleshooting Flowchart
4		Vertical line from middle of Screen. Vertical line of Different Color			Replace Panel
5	Vertical Bar	Vertical bar with 1/15 or its multiplication width of screen.		ABUS-A/B/C LOGIC And related connection PANEL	See Vertical Line Troubleshooting Flowchart
6		Vertical bar with 1/2 width of screen		ABUS-A/B/C LOGIC And related connection	See Vertical Bar Troubleshooting Flowchart
7	Horizontal Line	Single Horizontal line (Does not light) or Single Horizontal line does not light in entire screen		Make sure connector from SDR to Panel is correctly seated.	Full line, check SDR connector to Panel. Any line short of full Exchange Panel
8		Every other lines do not light in entire screen		X-SUS Y-SUS SDRU and D	Exchange X-SUS or Y-SUS Exchange SDR-U or SDR-D
9	Horizontal Bar	Bar width of 1/8 of vertical size of the screen does not light		Make sure connector from SDR to Panel is correctly seated. If connection ok. SDR-U or D	Exchange SDR board
10		Bar width of 1/2 vertical size of the screen does not light. Could be Top or Bottom.		SDRU or SDRD Y or X-SUS And related connections.	See Horizontal Bar Troubleshooting Flowchart
11	Image sticking (or Image retentions)	Fixed contents are always visible	Text or Graphics of any kind.	In some cases, residual images may remain after the short term display of still images when the picture changes. NORMAL	Lower Contrast & Brightness Set Image Power to MID Perform Screen Wipe
12	Twinkle	The entire screen momentarily becomes brighter or darker.		Loose contact on Connector	Re-Connect cables or replace defective cables on LVDS connector on Logic PWB
13	Flicker	The entire screen flickers continuously		Loose contact on Connector	
14	Luminance is abnormal	Luminance can not be displayed correctly		LOGIC	Exchange LOGIC
15	Crominance is abnormal	Colors can not be displayed correctly		LOGIC	Exchange LOGIC
16	Sync is disturbed	Syncronization is abnormal		LOGIC	Exchange LOGIC
17	Picture is Distorted	There is an image, but it is not normal.		LOGIC	Exchange LOGIC
18	Some steps of gradation are skipped	Luminance linearity is poor.		LOGIC	Exchange LOGIC
19	Abnormal Noise	Unusual Noise coming from inside the set. Some Panel Noise is Normal		POWER SUPPLY, X or Y-SUS, Cabinet	Find defective part by watching and hearing, after replace defective part.
20	Control of external communication is abnormal.	unable to adjust Contrast, Chrominance and gamma value.		LOGIC	Exchange LOGIC PWB

4.6 FAILURE ANALYSIS PROCEDURE

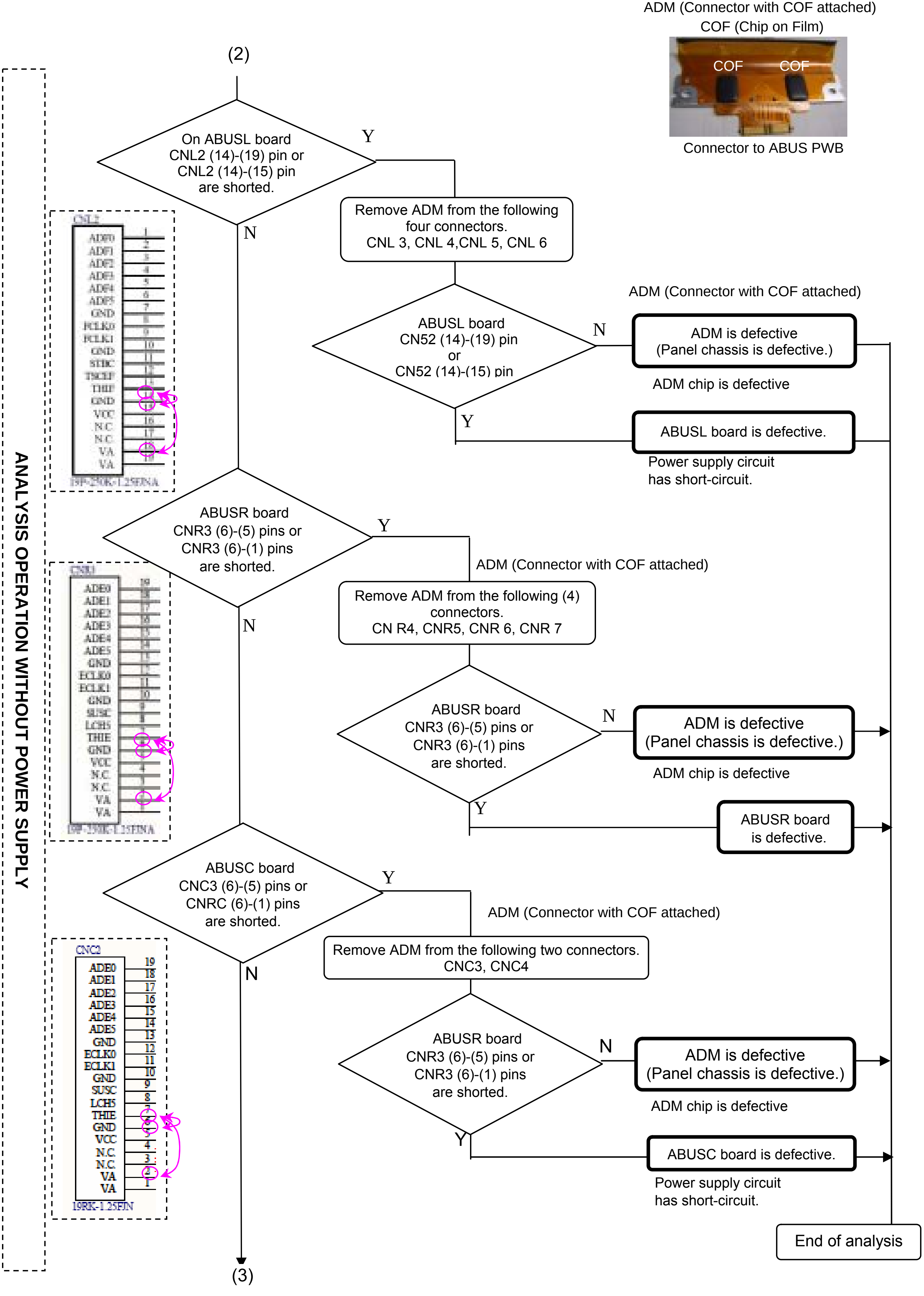
4.6.2 "The entire screen does not light (No Picture)" Problem analysis procedure

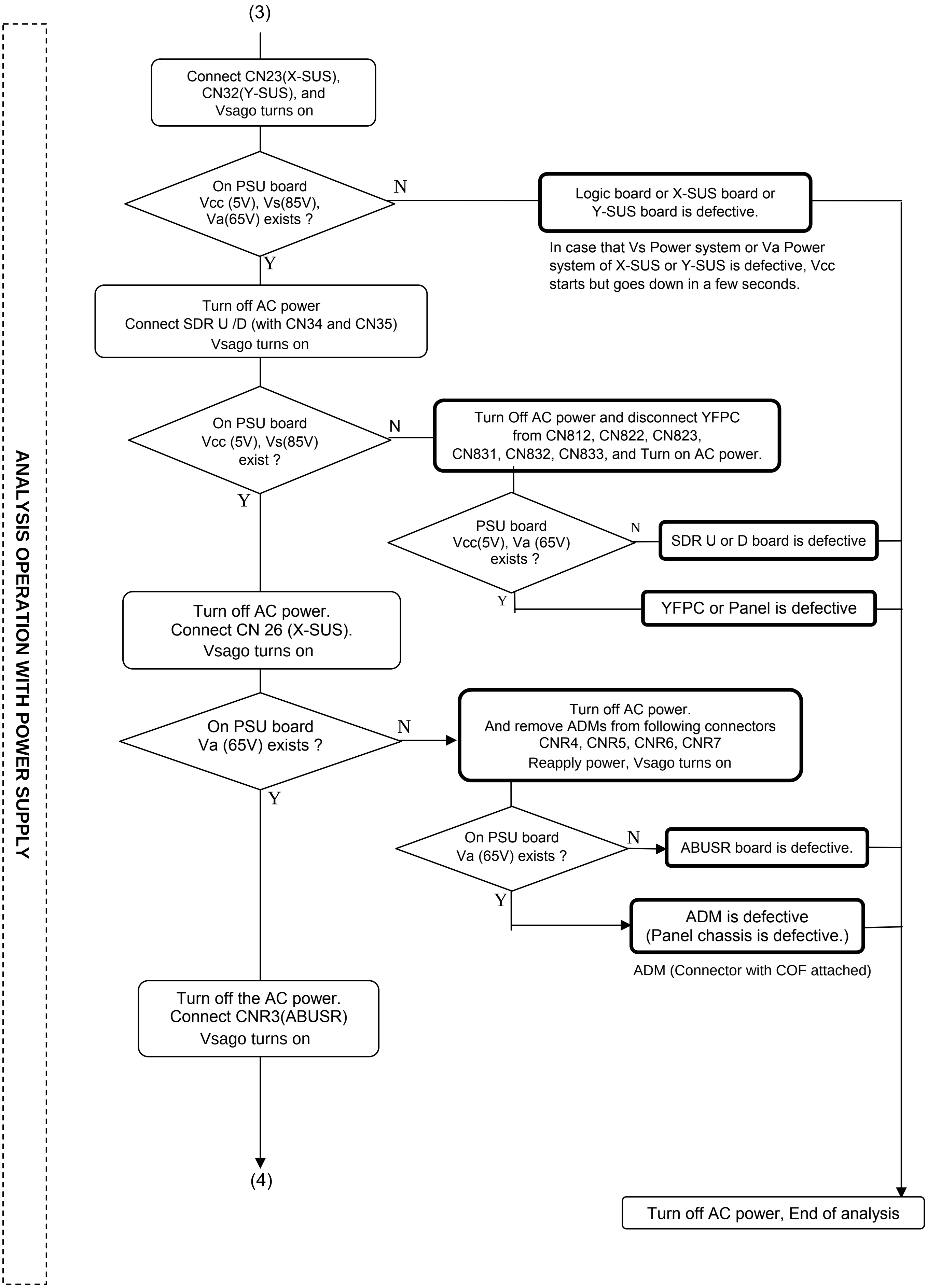

The entire screen does not light.
(Main power is off.)
Y
Remove CN6 (on LOGIC Board, PSU-LOGIC cable)
Turn on AC power.
PSU board Vpr2 (3.3V) exists?
N
PSU board is defective.
STANDBY power supply has abnormality.
Y
Turn off AC power. Connect CN 6 (LOGIC). Turn on AC power
PSU board Vpr2 (3.3V) exists?
N
LOGIC board is defective.
STANDBY power supply (MPU power supply) system has short-circuit.
Y
Turn off the AC power. Remove the following power connectors (five locations): CN 23, CN26 (X-SUS), CN 32 (Y-SUS) CNR3 (ABUSR), CNL 2 (ABUSL)
ANALYSIS OPERATION WITHOUT POWER SUPPLY
XSUS
CN22
[XSUS - YSUS]
13
-Vs
12
-Vs
11
NC
10
GND
9
NC
8
Vu
7
NC
6
Vcc
5
NC
4
GND
3
NC
2
Vs
1
Vs
CN23
[XSUS - PSU]
10
Vs
9
Vs
8
Vs
7
NC
6
GND
5
GND
4
GND
3
Vcc
2
NC
1
Va
X-SUS board CN23 (3)-(4) pins or CN23 (8)-(6) pins or CN22 (10)-(13) pins are shorted.
Y
X-SUS board is defective.
Switching circuit (power supply) has a short-circuit.
N
(1)
Turn off the AC power, End of analysis

TROUBLESHOOTING THE 50AE1 PANEL

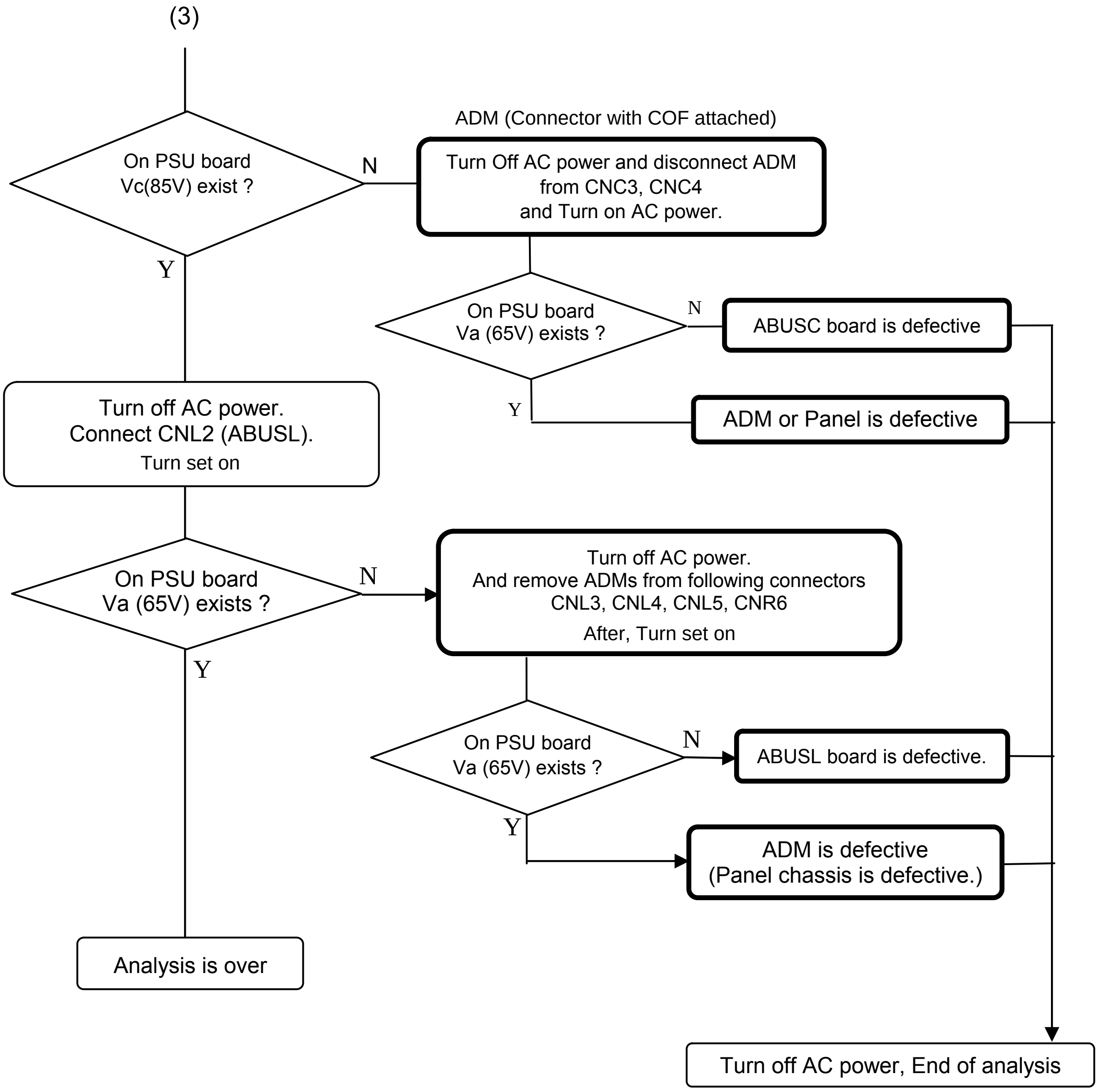

ANALYSIS OPERATION WITHOUT POWER SUPPLY
SDRU
2 ODD VHA
4 ODD GND
6 ODD GND
8 ODD GND
10 ODD DA
12 ODD OC2
14 ODD VDL
16 ODD CLK
18 ODD GND
20 ODD GND
22 ODD GND
24 ODD VHB
26 N.C.
28 EVEN VHA
30 EVEN GND
32 EVEN GND
34 EVEN GND
36 EVEN DA
38 EVEN OC2
40 EVEN VDL
42 EVEN CLK
44 EVEN GND
46 EVEN GND
48 EVEN GND
50 EVEN VHB
SDRD
2 ODD VHA
4 ODD GND
6 ODD GND
8 ODD GND
10 ODD DA
12 ODD OC2
14 ODD VDL
16 ODD CLK
18 ODD GND
20 ODD GND
22 ODD GND
24 ODD VHB
26 N.C.
28 EVEN VHA
30 EVEN GND
32 EVEN GND
34 EVEN GND
36 EVEN DA
38 EVEN OC2
40 EVEN VDL
42 EVEN CLK
44 EVEN GND
46 EVEN GND
48 EVEN GND
50 EVEN VHB
YSUS
CN32
[YSUS - XSUS]
-Vs 13
-Vs 12
NC 11
GND 10
NC 9
Vcc 8
NC 7
Vx 6
NC 5
GND 4
NC 3
Vs 2
Vs 1
(1)
Remove SDR from the following two connectors of Y-SUS.* CN34 CN35
*For procedure to remove SDM, Refer to Chapter 5.3
On CN801 on SDRU, or CN811 on SDRD, short circuit in following connection? (2)-(6), (20)-(24), (28)-(30), (46)-(50)
Y
SDU or D is defective
N
X-BUS board CN63 (1)-(9) are shorted.
Y
Remove the six XFPCs (Disconnect CN61, CN62, CN63, CN64, CN65, CN66)
N
X-BUS board CN63 (1)-(9)
Y
X-BUS board is defective.
N
X-BUS board CN63 (1)-(9)
Y
X-SUS board is defective.
N
X-BUS board is defective.
PANEL chassis is defective.
Y-SUS board CN32 (1)-(4) pins or CN32 (6)-(4) pins or CN32 (8)-(10) pins or CN32 (10)-(13) pins are shorted.
Y
Y-SUS board is defective.
Switching circuit (power supply) has a short-circuit.
N
(2)
End of analysis

TROUBLESHOOTING THE 50AE1 PANEL

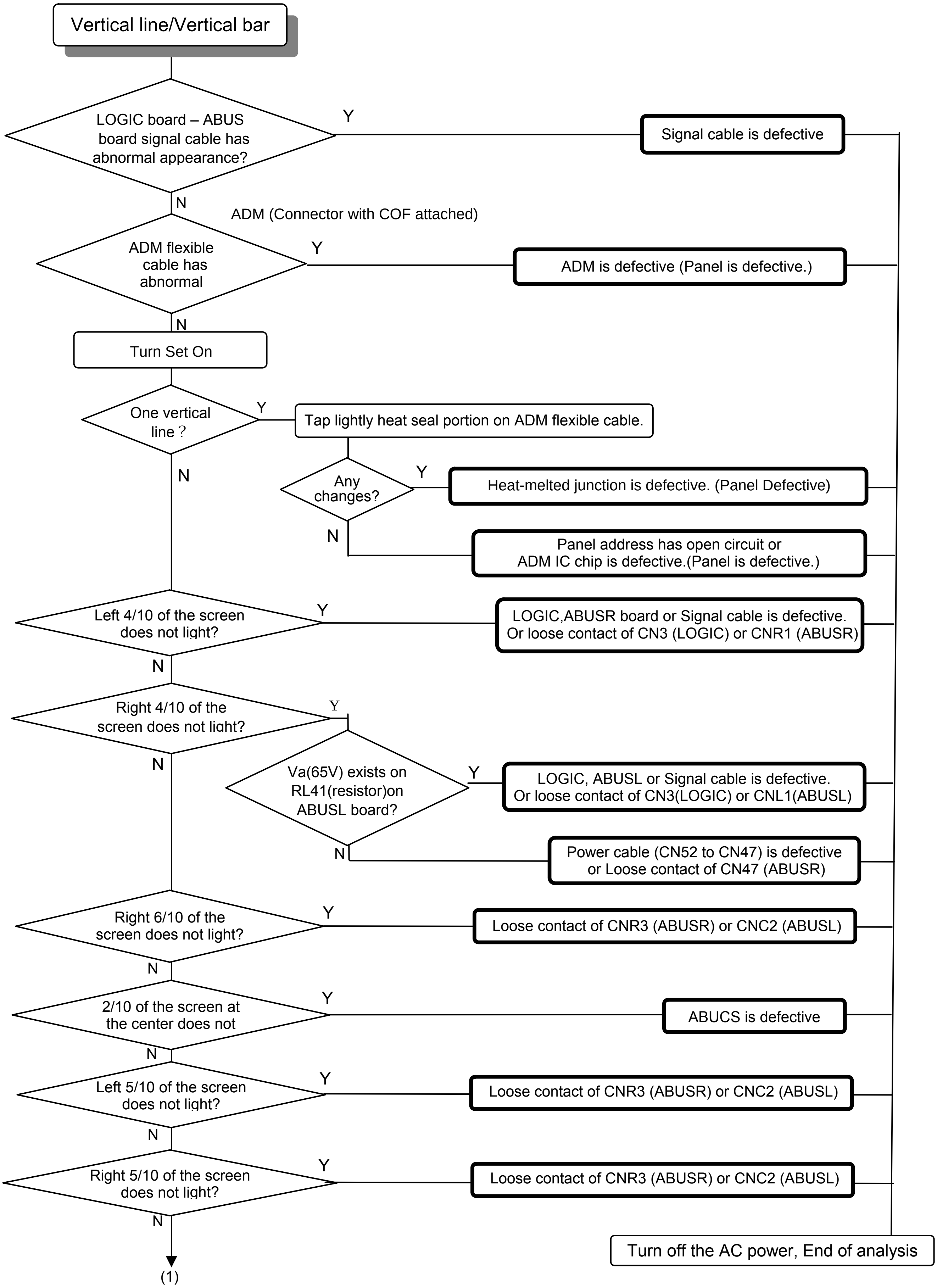

ADM (Connector with COF attached)
COF (Chip on Film)
COF
COF
Connector to ABUS PWB
ANALYSIS OPERATION WITHOUT POWER SUPPLY
(2)
On ABUSL board CNL2 (14)-(19) pin or CNL2 (14)-(15) pin are shorted.
Y
N
Remove ADM from the following four connectors. CNL 3, CNL 4,CNL 5, CNL 6
ADM (Connector with COF attached)
ABUSL board CN52 (14)-(19) pin or CN52 (14)-(15) pin
N
Y
ADM is defective (Panel chassis is defective.)
ADM chip is defective
ABUSL board is defective.
Power supply circuit has short-circuit.
CNL2
ADF0
ADF1
ADF2
ADF3
ADF4
ADF5
GND
FCLK0
FCLK1
GND
STBC
TSCEF
THEF
GND
VCC
N.C
N.C
VA
VA
19P-250K-1.25FINA
ABUSR board CNR3 (6)-(5) pins or CNR3 (6)-(1) pins are shorted.
Y
N
ADM (Connector with COF attached)
Remove ADM from the following (4) connectors. CN R4, CNR5, CNR 6, CNR 7
ABUSR board CNR3 (6)-(5) pins or CNR3 (6)-(1) pins are shorted.
N
Y
ADM is defective (Panel chassis is defective.)
ADM chip is defective
ABUSR board is defective.
CNR3
ADE0
ADE1
ADE2
ADE3
ADE4
ADE5
GND
ECLK0
ECLK1
GND
SUSC
LCHS
THIE
GND
VCC
N.C
N.C
VA
VA
19P-250K-1.25FINA
ABUSC board CNC3 (6)-(5) pins or CNRC (6)-(1) pins are shorted.
Y
N
ADM (Connector with COF attached)
Remove ADM from the following two connectors. CNC3, CNC4
ABUSR board CNR3 (6)-(5) pins or CNR3 (6)-(1) pins are shorted.
N
Y
ADM is defective (Panel chassis is defective.)
ADM chip is defective
ABUSC board is defective.
Power supply circuit has short-circuit.
CNC2
ADE0
ADE1
ADE2
ADE3
ADE4
ADE5
GND
ECLK0
ECLK1
GND
SUSC
LCHS
THIE
GND
VCC
N.C
N.C
VA
VA
19RK-1.25FJN
End of analysis
(3)

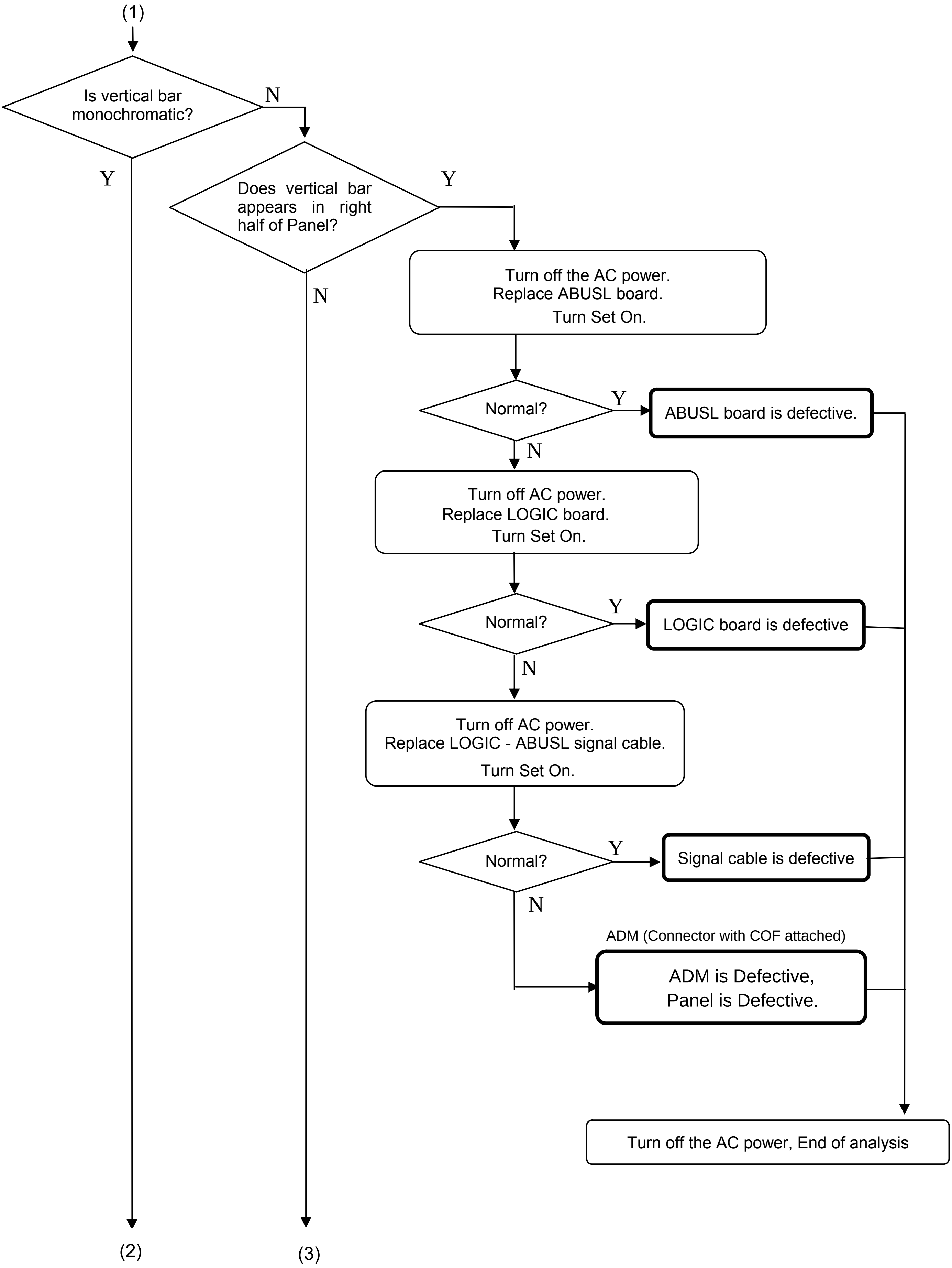

ANALYSIS OPERATION WITH POWER SUPPLY
(3)
Connect CN23(X-SUS), CN32(Y-SUS), and Vsago turns on
On PSU board Vcc (5V), Vs(85V), Va(65V) exists ?
N
Logic board or X-SUS board or Y-SUS board is defective.
In case that Vs Power system or Va Power system of X-SUS or Y-SUS is defective, Vcc starts but goes down in a few seconds.
Y
Turn off AC power Connect SDR U /D (with CN34 and CN35) Vsago turns on
On PSU board Vcc (5V), Vs(85V) exist ?
N
Turn Off AC power and disconnect YFPC from CN812, CN822, CN823, CN831, CN832, CN833, and Turn on AC power.
PSU board Vcc(5V), Va (65V) exists ?
N
SDR U or D board is defective
Y
YFPC or Panel is defective
Y
Turn off AC power. Connect CN 26 (X-SUS). Vsago turns on
On PSU board Va (65V) exists ?
N
Turn off AC power. And remove ADMs from following connectors CNR4, CNR5, CNR6, CNR7 Reapply power, Vsago turns on
On PSU board Va (65V) exists ?
N
ABUSR board is defective.
Y
ADM is defective (Panel chassis is defective.)
ADM (Connector with COF attached)
Y
Turn off the AC power. Connect CNR3(ABUSR) Vsago turns on
(4)
Turn off AC power, End of analysis

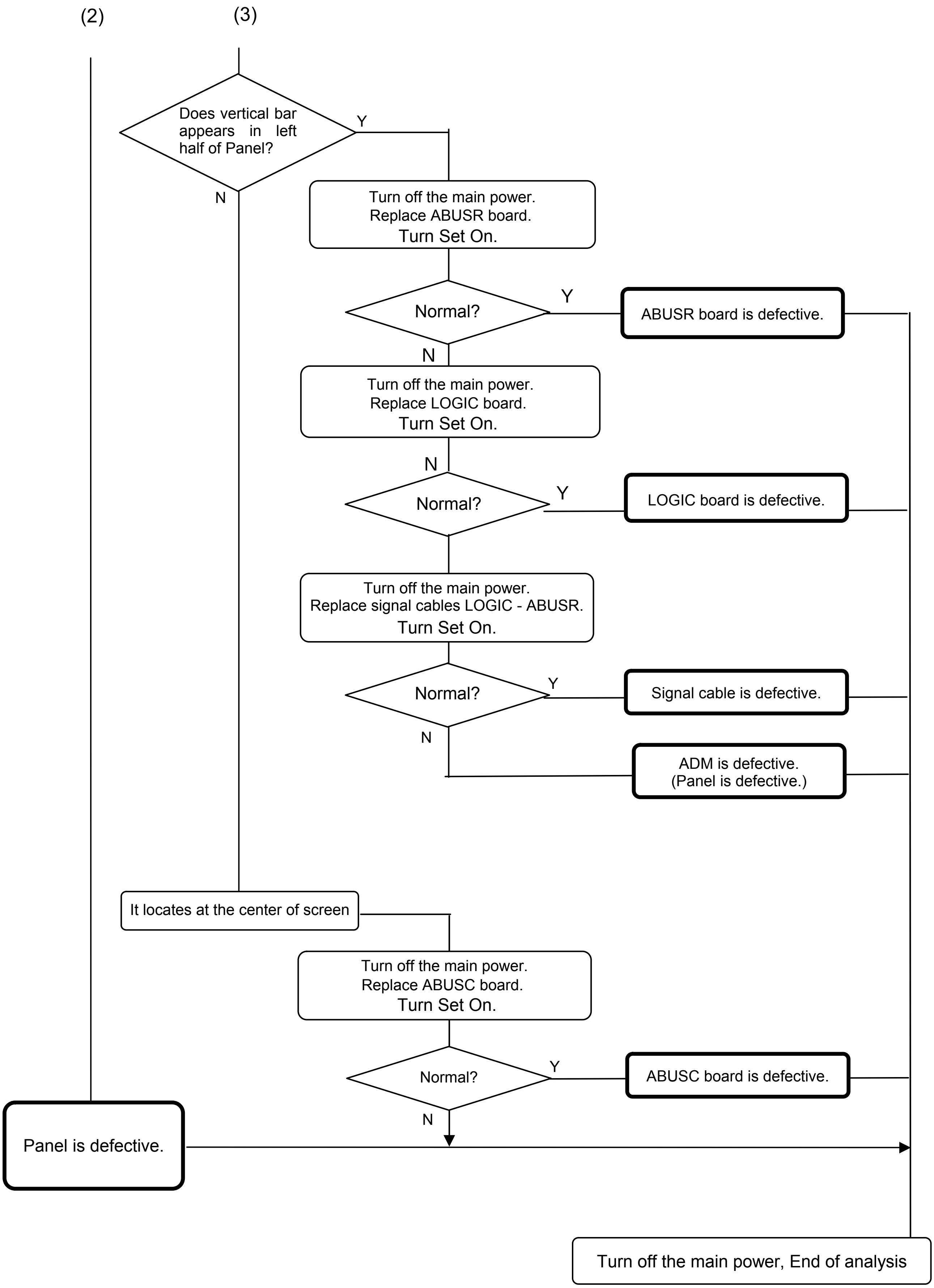
ANALYSIS OPERATION WITH POWER SUPPLY


(3)
On PSU board
Vc(85V) exist ?
N
Y
ADM (Connector with COF attached)
Turn Off AC power and disconnect ADM from CNC3, CNC4 and Turn on AC power.
On PSU board
Va (65V) exists ?
N
ABUSC board is defective
Y
ADM or Panel is defective
Turn off AC power.
Connect CNL2 (ABUSL).
Turn set on
On PSU board
Va (65V) exists ?
N
Turn off AC power.
And remove ADMs from following connectors
CNL3, CNL4, CNL5, CNR6
After, Turn set on
Y
On PSU board
Va (65V) exists ?
N
ABUSL board is defective.
Y
ADM is defective
(Panel chassis is defective.)
Analysis is over
Turn off AC power, End of analysis

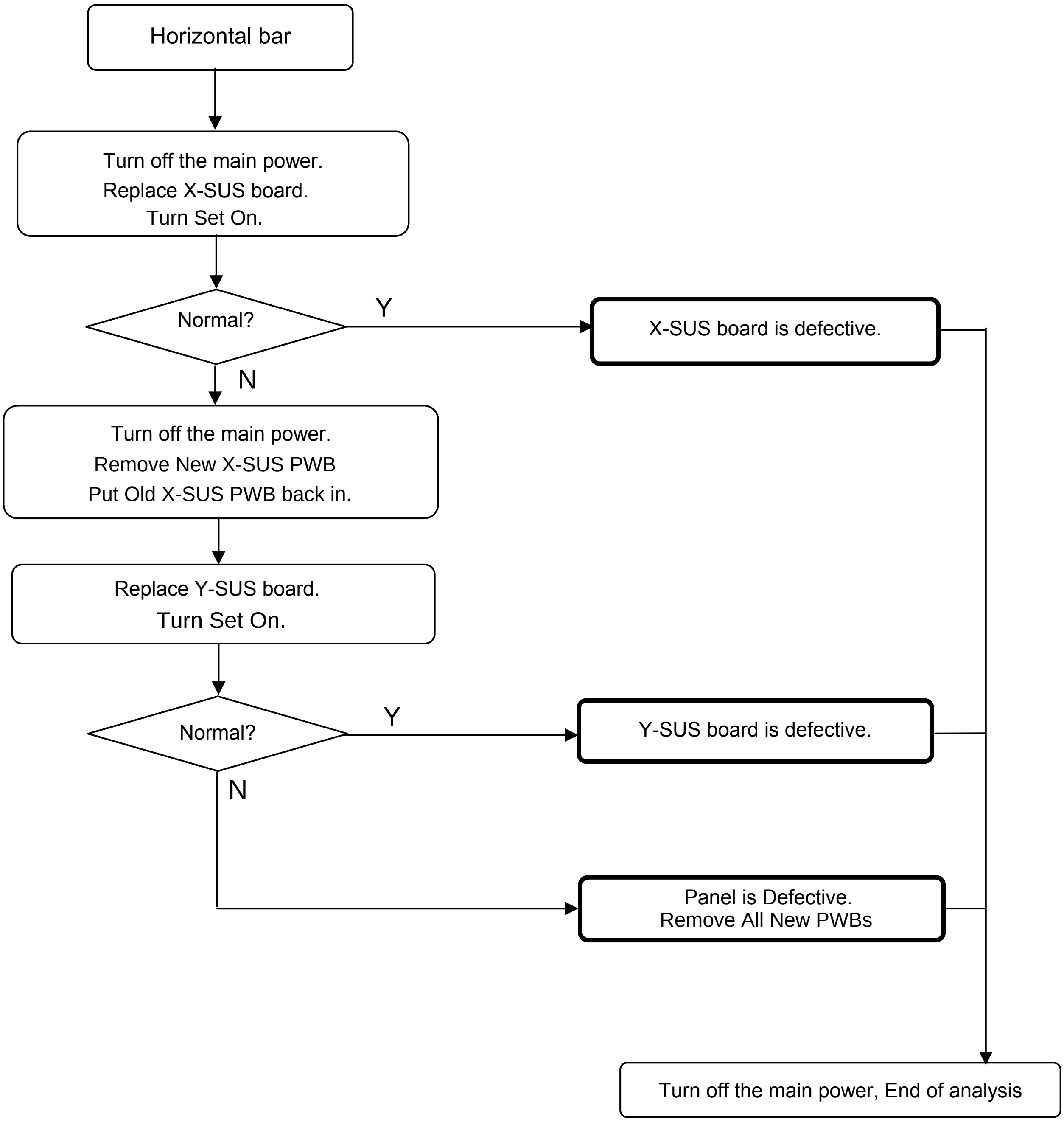
4.6.2 "Vertical line/Vertical bar" Problem analysis procedure


Vertical line/Vertical bar
LOGIC board – ABUS board signal cable has abnormal appearance?
Y
Signal cable is defective
N
ADM (Connector with COF attached)
ADM flexible cable has abnormal
Y
ADM is defective (Panel is defective.)
N
Turn Set On
One vertical line？
Y
Tap lightly heat seal portion on ADM flexible cable.
Any changes?
Y
Heat-melted junction is defective. (Panel Defective)
N
Panel address has open circuit or ADM IC chip is defective.(Panel is defective.)
N
Left 4/10 of the screen does not light?
Y
LOGIC,ABUSR board or Signal cable is defective. Or loose contact of CN3 (LOGIC) or CNR1 (ABUSR)
N
Right 4/10 of the screen does not light?
Y
Va(65V) exists on RL41(resistor)on ABUSL board?
Y
LOGIC, ABUSL or Signal cable is defective. Or loose contact of CN3(LOGIC) or CNL1(ABUSL)
N
Power cable (CN52 to CN47) is defective or Loose contact of CN47 (ABUSR)
N
Right 6/10 of the screen does not light?
Y
Loose contact of CNR3 (ABUSR) or CNC2 (ABUSL)
N
2/10 of the screen at the center does not
Y
ABUCS is defective
N
Left 5/10 of the screen does not light?
Y
Loose contact of CNR3 (ABUSR) or CNC2 (ABUSL)
N
Right 5/10 of the screen does not light?
Y
Loose contact of CNR3 (ABUSR) or CNC2 (ABUSL)
N
(1)
Turn off the AC power, End of analysis


(1)
Is vertical bar monochromatic?
N
Y
Does vertical bar appears in right half of Panel?
Y
N
Turn off the AC power.
Replace ABUSL board.
Turn Set On.
Normal?
Y
ABUSL board is defective.
N
Turn off AC power.
Replace LOGIC board.
Turn Set On.
Normal?
Y
LOGIC board is defective
N
Turn off AC power.
Replace LOGIC - ABUSL signal cable.
Turn Set On.
Normal?
Y
Signal cable is defective
N
ADM (Connector with COF attached)
ADM is Defective,
Panel is Defective.
Turn off the AC power, End of analysis
(2)
(3)


(2)
(3)
Does vertical bar appears in left half of Panel?
Y
N
Turn off the main power.
Replace ABUSR board.
Turn Set On.
Normal?
Y
ABUSR board is defective.
N
Turn off the main power.
Replace LOGIC board.
Turn Set On.
N
Normal?
Y
LOGIC board is defective.
Turn off the main power.
Replace signal cables LOGIC - ABUSR.
Turn Set On.
Normal?
Y
Signal cable is defective.
N
ADM is defective.
(Panel is defective.)
It locates at the center of screen
Turn off the main power.
Replace ABUSC board.
Turn Set On.
Normal?
Y
ABUSC board is defective.
N
Panel is defective.
Turn off the main power, End of analysis

4.6.3 "Horizontal bar" Problem analysis procedure


Horizontal bar
Turn off the main power.
Replace X-SUS board.
Turn Set On.
Normal?
Y
N
X-SUS board is defective.
Turn off the main power.
Remove New X-SUS PWB
Put Old X-SUS PWB back in.
Replace Y-SUS board.
Turn Set On.
Normal?
Y
N
Y-SUS board is defective.
Panel is Defective.
Remove All New PWBs
Turn off the main power, End of analysis

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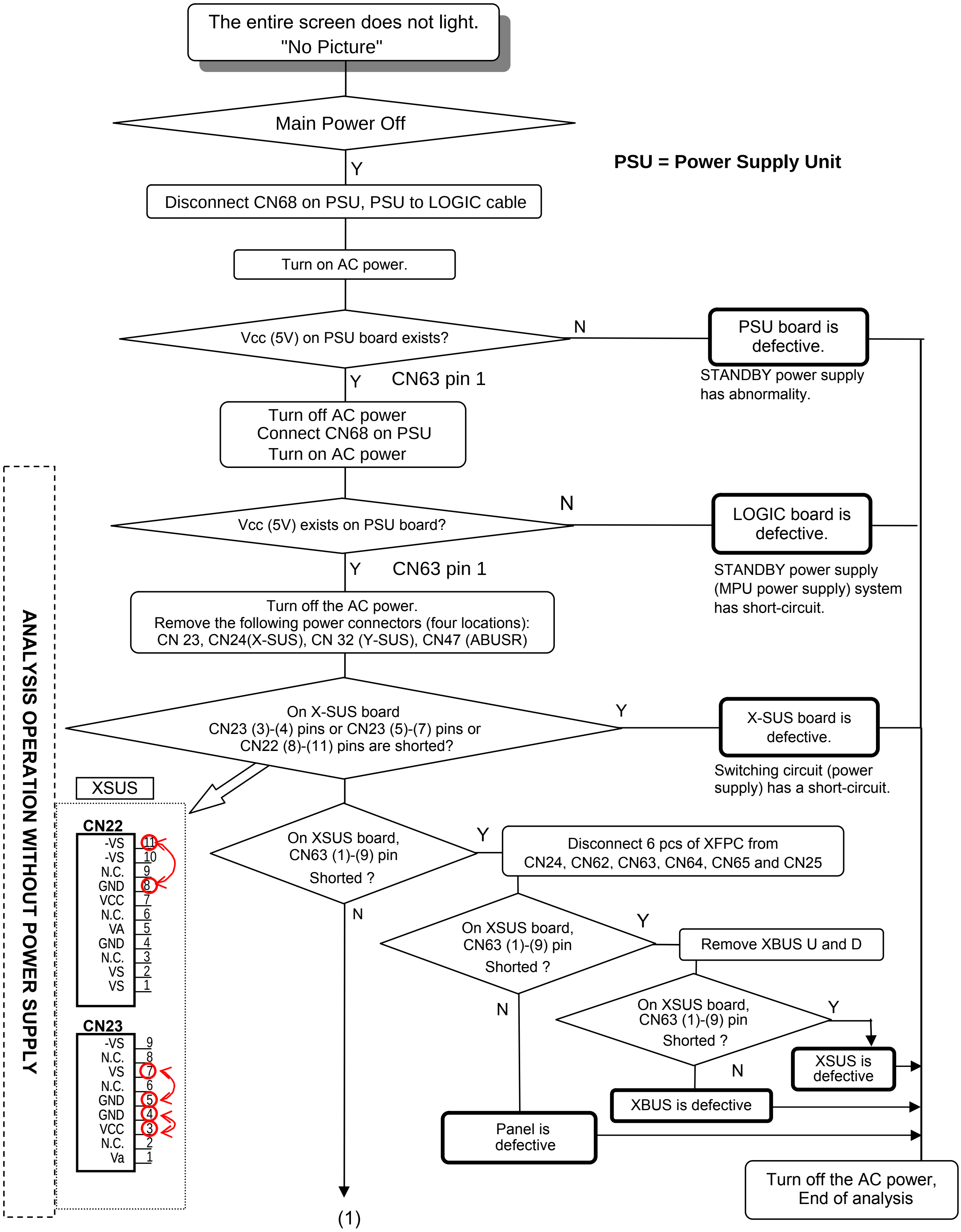
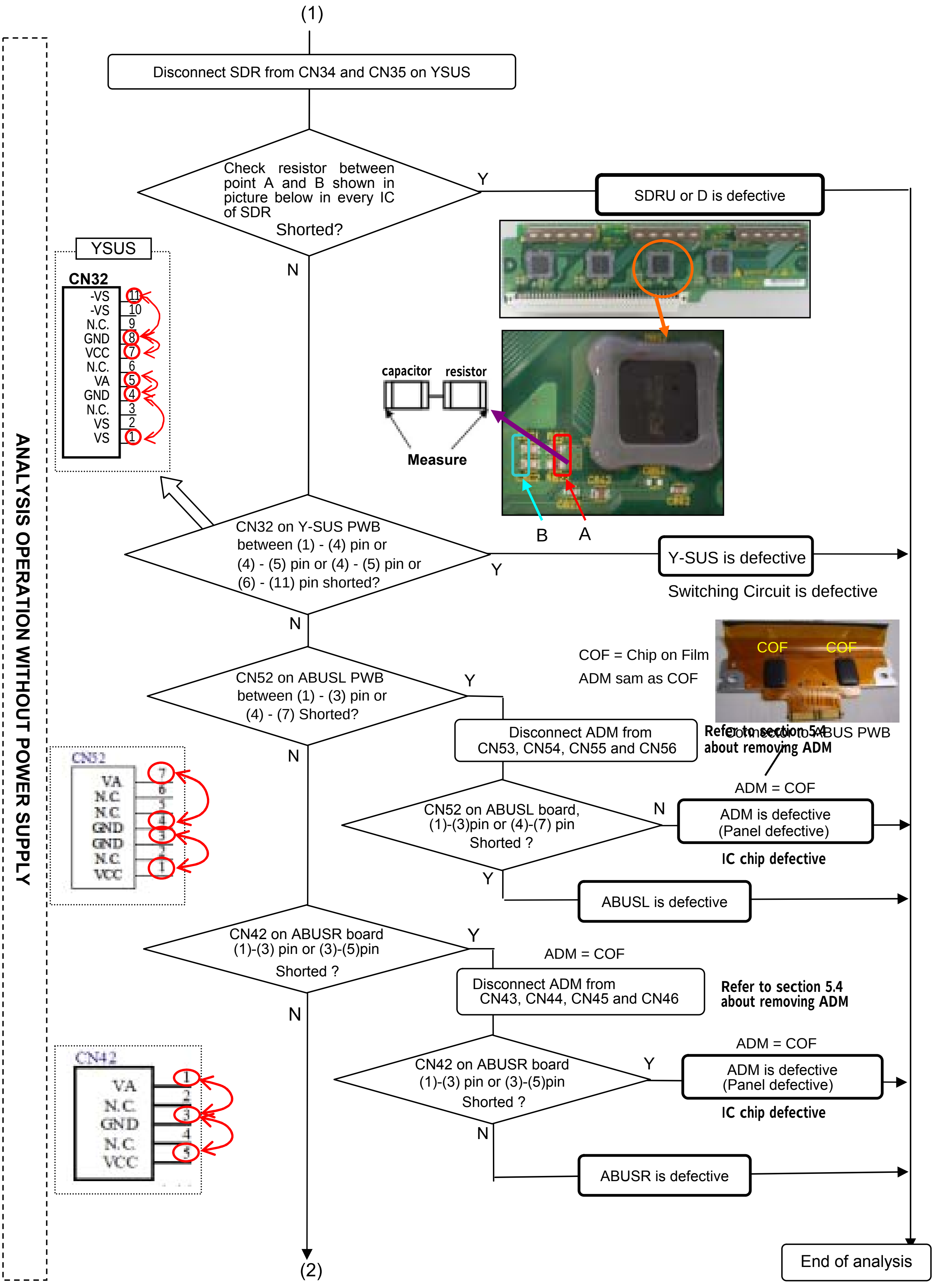
TROUBLESHOOTING THE 42AE1 PANEL:

4.6 PROBLEM ANALYSIS PROCEDURE

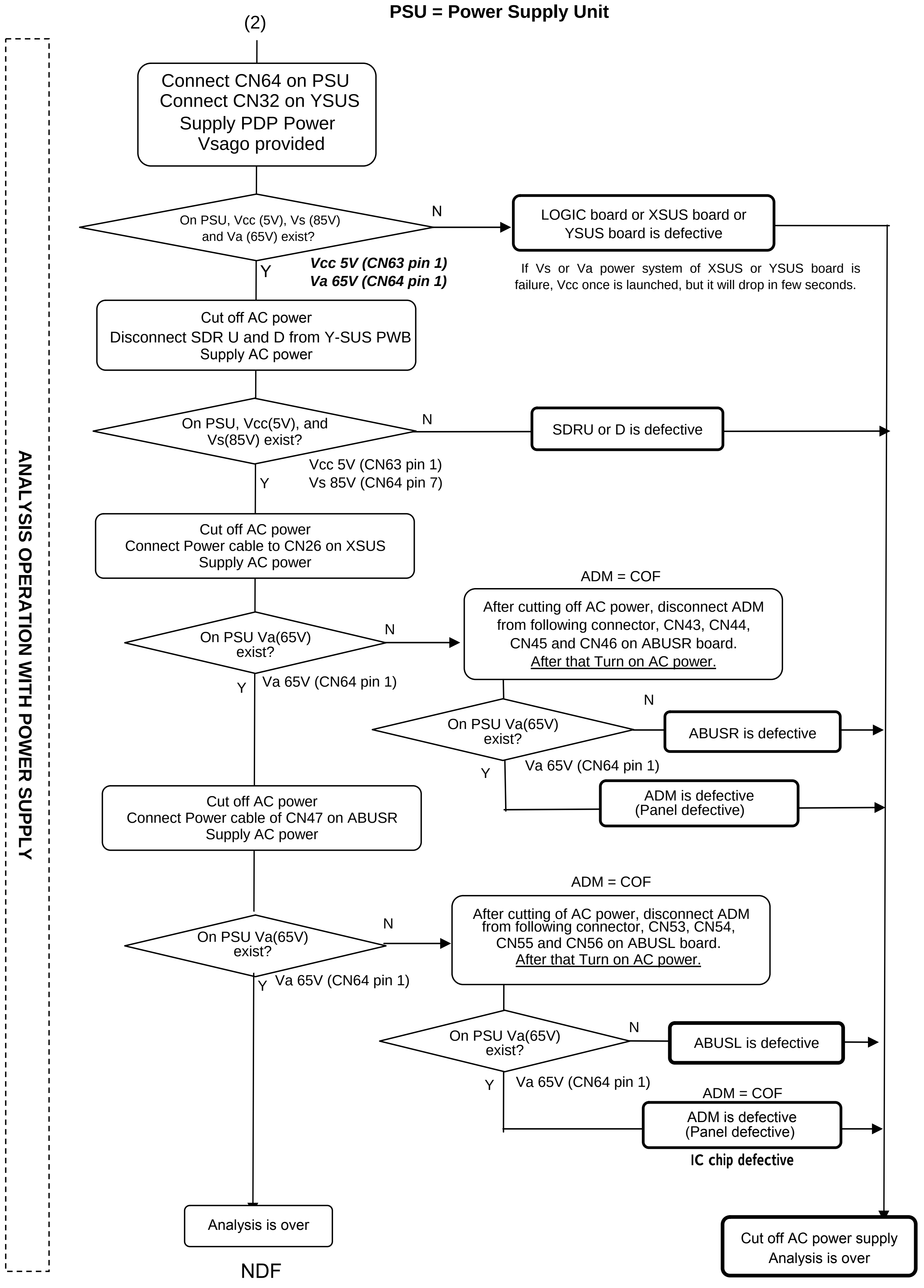
4.6.1 "The entire screen does not light (No Picture)" analysis procedure


The entire screen does not light.
"No Picture"
Main Power Off
Y
PSU = Power Supply Unit
Disconnect CN68 on PSU, PSU to LOGIC cable
Turn on AC power.
Vcc (5V) on PSU board exists?
N
PSU board is defective.
STANDBY power supply has abnormality.
Y
CN63 pin 1
Turn off AC power
Connect CN68 on PSU
Turn on AC power
Vcc (5V) exists on PSU board?
N
LOGIC board is defective.
STANDBY power supply (MPU power supply) system has short-circuit.
Y
CN63 pin 1
Turn off the AC power.
Remove the following power connectors (four locations):
CN 23, CN24(X-SUS), CN 32 (Y-SUS), CN47 (ABUSR)
On X-SUS board
CN23 (3)-(4) pins or CN23 (5)-(7) pins or
CN22 (8)-(11) pins are shorted?
Y
X-SUS board is defective.
Switching circuit (power supply) has a short-circuit.
ANALYSIS OPERATION WITHOUT POWER SUPPLY
XSUS
CN22
-VS 11
-VS 10
N.C. 9
GND 8
VCC 7
N.C. 6
VA 5
GND 4
N.C. 3
VS 2
VS 1
CN23
-VS 9
N.C. 8
VS 7
N.C. 6
GND 5
GND 4
VCC 3
N.C. 2
Va 1
On XSUS board,
CN63 (1)-(9) pin
Shorted ?
Y
Disconnect 6 pcs of XFPC from
CN24, CN62, CN63, CN64, CN65 and CN25
N
On XSUS board,
CN63 (1)-(9) pin
Shorted ?
Y
Remove XBUS U and D
N
On XSUS board,
CN63 (1)-(9) pin
Shorted ?
Y
XSUS is defective
N
XBUS is defective
Panel is defective
Turn off the AC power,
End of analysis
(1)

TROUBLESHOOTING THE 42AE1 PANEL:

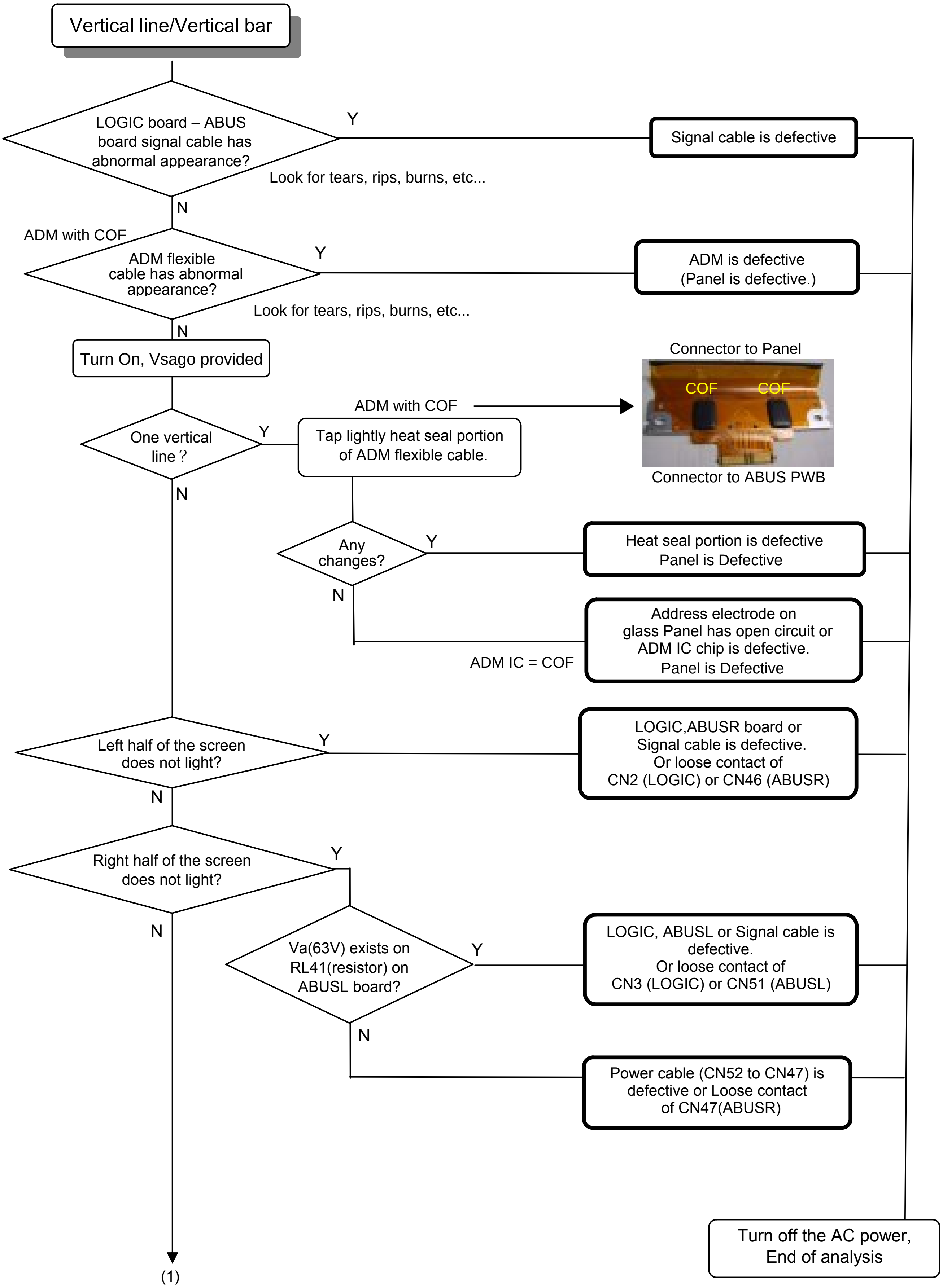

(1)
ANALYSIS OPERATION WITHOUT POWER SUPPLY
Disconnect SDR from CN34 and CN35 on YSUS
Check resistor between point A and B shown in picture below in every IC of SDR Shorted?
Y
SDRU or D is defective
N
capacitor
resistor
Measure
B
A
YSUS
CN32
-VS 11
-VS 10
N.C. 9
GND 8
VCC 7
N.C. 6
VA 5
GND 4
N.C. 3
VS 2
VS 1
CN32 on Y-SUS PWB between (1) - (4) pin or (4) - (5) pin or (4) - (5) pin or (6) - (11) pin shorted?
Y
Y-SUS is defective
Switching Circuit is defective
N
COF = Chip on Film
ADM sam as COF
COF
COF
CN52 on ABUSL PWB between (1) - (3) pin or (4) - (7) Shorted?
Y
Disconnect ADM from CN53, CN54, CN55 and CN56
Refer to section 5.4 about removing ADM
Connector to ABUS PWB
ADM = COF
CN52 on ABUSL board, (1)-(3)pin or (4)-(7) pin Shorted ?
N
ADM is defective (Panel defective)
IC chip defective
Y
ABUSL is defective
N
CN52
VA 7
N.C 6
N.C 5
GND 4
GND 3
N.C 2
VCC 1
CN42 on ABUSR board (1)-(3) pin or (3)-(5)pin Shorted ?
Y
ADM = COF
Disconnect ADM from CN43, CN44, CN45 and CN46
Refer to section 5.4 about removing ADM
ADM = COF
CN42 on ABUSR board (1)-(3) pin or (3)-(5)pin Shorted ?
Y
ADM is defective (Panel defective)
IC chip defective
N
ABUSR is defective
N
CN42
VA 1
N.C 2
GND 3
N.C 4
VCC 5
(2)
End of analysis

TROUBLESHOOTING THE 42AE1 PANEL:

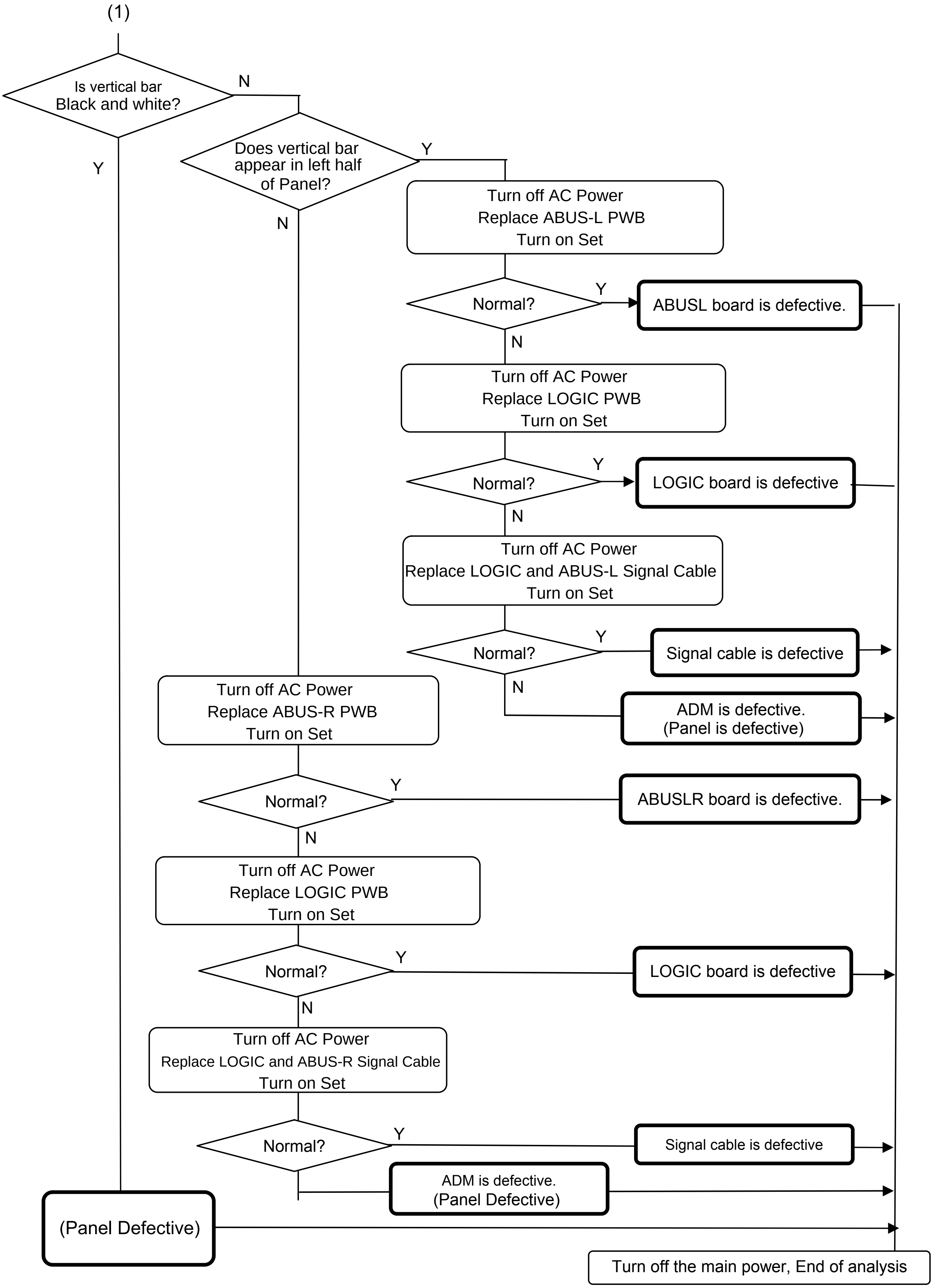

PSU = Power Supply Unit
(2)
ANALYSIS OPERATION WITH POWER SUPPLY
Connect CN64 on PSU
Connect CN32 on YSUS
Supply PDP Power
Vsago provided
On PSU, Vcc (5V), Vs (85V) and Va (65V) exist?
N
LOGIC board or XSUS board or YSUS board is defective
If Vs or Va power system of XSUS or YSUS board is failure, Vcc once is launched, but it will drop in few seconds.
Y
Vcc 5V (CN63 pin 1)
Va 65V (CN64 pin 1)
Cut off AC power
Disconnect SDR U and D from Y-SUS PWB
Supply AC power
On PSU, Vcc(5V), and Vs(85V) exist?
N
SDRU or D is defective
Vcc 5V (CN63 pin 1)
Vs 85V (CN64 pin 7)
Y
Cut off AC power
Connect Power cable to CN26 on XSUS
Supply AC power
ADM = COF
On PSU Va(65V) exist?
N
After cutting off AC power, disconnect ADM from following connector, CN43, CN44, CN45 and CN46 on ABUSR board.
After that Turn on AC power.
Y
Va 65V (CN64 pin 1)
On PSU Va(65V) exist?
N
ABUSR is defective
Y
Va 65V (CN64 pin 1)
ADM is defective
(Panel defective)
Cut off AC power
Connect Power cable of CN47 on ABUSR
Supply AC power
ADM = COF
On PSU Va(65V) exist?
N
After cutting of AC power, disconnect ADM from following connector, CN53, CN54, CN55 and CN56 on ABUSL board.
After that Turn on AC power.
Y
Va 65V (CN64 pin 1)
On PSU Va(65V) exist?
N
ABUSL is defective
Y
Va 65V (CN64 pin 1)
ADM = COF
ADM is defective
(Panel defective)
IC chip defective
Analysis is over
NDF
Cut off AC power supply
Analysis is over

TROUBLESHOOTING THE 42AE1 PANEL:

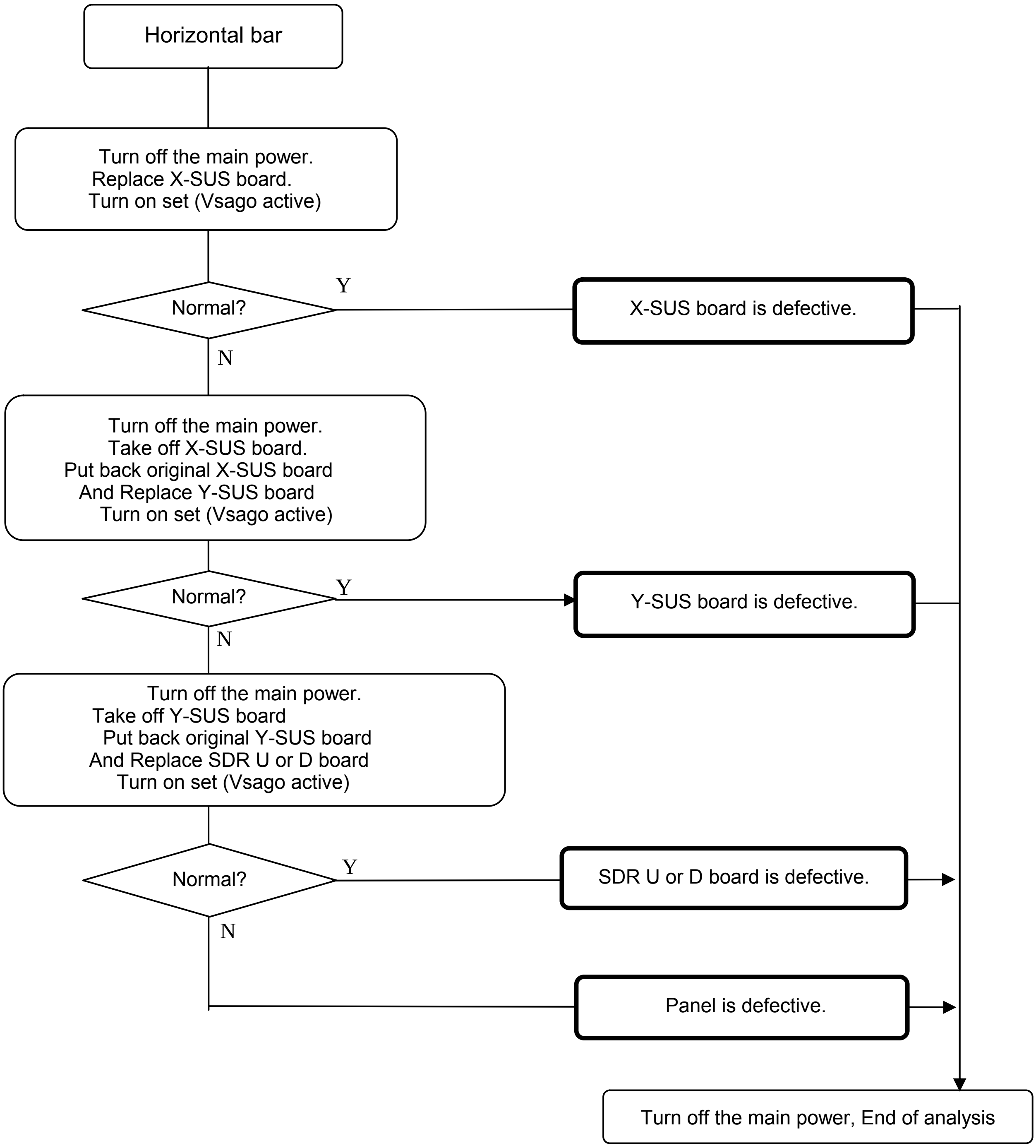
4.6.2 "Vertical line/Vertical bar" Problem analysis procedure


Vertical line/Vertical bar
LOGIC board – ABUS board signal cable has abnormal appearance?
Y
Signal cable is defective
Look for tears, rips, burns, etc...
N
ADM with COF
ADM flexible cable has abnormal appearance?
Y
ADM is defective (Panel is defective.)
Look for tears, rips, burns, etc...
N
Turn On, Vsago provided
Connector to Panel
COF
COF
Connector to ABUS PWB
ADM with COF
One vertical line？
Y
Tap lightly heat seal portion of ADM flexible cable.
N
Any changes?
Y
Heat seal portion is defective Panel is Defective
N
Address electrode on glass Panel has open circuit or ADM IC chip is defective. Panel is Defective
ADM IC = COF
Left half of the screen does not light?
Y
LOGIC,ABUSR board or Signal cable is defective. Or loose contact of CN2 (LOGIC) or CN46 (ABUSR)
N
Right half of the screen does not light?
Y
N
Va(63V) exists on RL41(resistor) on ABUSL board?
Y
LOGIC, ABUSL or Signal cable is defective. Or loose contact of CN3 (LOGIC) or CN51 (ABUSL)
N
Power cable (CN52 to CN47) is defective or Loose contact of CN47(ABUSR)
Turn off the AC power, End of analysis
(1)

TROUBLESHOOTING THE 42AE1 PANEL:


(1)
Is vertical bar Black and white?
N
Y
Does vertical bar appear in left half of Panel?
Y
N
Turn off AC Power
Replace ABUS-L PWB
Turn on Set
Normal?
Y
ABUSL board is defective.
N
Turn off AC Power
Replace LOGIC PWB
Turn on Set
Normal?
Y
LOGIC board is defective
N
Turn off AC Power
Replace LOGIC and ABUS-L Signal Cable
Turn on Set
Normal?
Y
Signal cable is defective
N
ADM is defective.
(Panel is defective)
Turn off AC Power
Replace ABUS-R PWB
Turn on Set
Normal?
Y
ABUSLR board is defective.
N
Turn off AC Power
Replace LOGIC PWB
Turn on Set
Normal?
Y
LOGIC board is defective
N
Turn off AC Power
Replace LOGIC and ABUS-R Signal Cable
Turn on Set
Normal?
Y
Signal cable is defective
ADM is defective.
(Panel Defective)
(Panel Defective)
Turn off the main power, End of analysis

4.6.3 "Horizontal bar" Problem analysis procedure


Horizontal bar
Turn off the main power.
Replace X-SUS board.
Turn on set (Vsago active)
Normal?
Y
N
X-SUS board is defective.
Turn off the main power.
Take off X-SUS board.
Put back original X-SUS board
And Replace Y-SUS board
Turn on set (Vsago active)
Normal?
Y
N
Y-SUS board is defective.
Turn off the main power.
Take off Y-SUS board
Put back original Y-SUS board
And Replace SDR U or D board
Turn on set (Vsago active)
Normal?
Y
N
SDR U or D board is defective.
Panel is defective.
Turn off the main power, End of analysis

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